# PEDIATRIC BOARD

## CERTIFICATION AND RECERTIFICATION

# MULTIPLE CHOICE QUESTIONS AND ANSWERS

*AN EXCELLENT GUIDE*

*AN ESSENTIAL TOOL FOR BOARD CERTIFICATION*

*by*

**D. KANJILAL, M.D.**

*Collected by*

**AHMED HAMMOUDI**

1. A patient's serum SMA 6 result reveals Na 136, Cl 104, K 4.0, BUN 21, creatinine 0.9, and glucose 90. What is the serum osmolality?
   a) 270
   b) 280
   c) 284
   d) 300
   e) 310

2. The term DKA (diabetic keto acidosis) means all of the following except:
   a) Serum glucose is more than 300 mg/dL
   b) Ketonemia
   c) pH less than 7.30
   d) Bicarbonate less than 15 mEq/L
   e) Absence of ketone in the urine

3. Human beta cells can be in infected by all of the following organisms except:
   a) Coxsackievirus
   b) Group B streptococcus (GBS)
   c) CMV
   d) Mumps
   e) Rubella

4. The first abnormality noted in iron deficiency anemia is:
   a) Reduced iron stores in tissue (hemosiderin in bone marrow disappear).
   b) Reduced serum ferritin
   c) Reduced serum iron and increased TIBC (total iron-binding capacity)
   d) Increased FEP (free erythrocyte protoporphyrin)
   e) Decreased MCH & MCV

5. A 3.9 kg newborn appears with cyanosis at 2 hours of age, cyanosis progressively gets worse, also dyspnea. An examination reveals lower extremities are less cyanotic than upper extremities, hyperactive precordium, either no murmur or PDA murmur of grade 3/6, 2nd heart sound single and loud, or occasionally it may be split. Chest X-ray reveals mild cardiomegaly, normal or increased pulmonary flow, narrow mediastinum. ABG reveals $Pao_2$ 15 to 30, pH 7.30, $Pco_2$ 35, $O_2$ saturation 30 to 70%, base deficit – 15.0. $Pao_2$ increases slightly after hyperoxia test (i.e., 100% oxygen). EKG reveals biventricular hypertrophy. Newborn was intubated and placed on mechanical ventilator. $PGE_1$ and $NaHCO_3$ are given. Baby's oxygen saturation improved up to 85 to 90%. Next appropriate step in management:
   a) Fontan procedure
   b) Blalock-Taussig shunt
   c) Rashkind balloon atrial septostomy
   d) Norwood operation
   e) Starnes procedure

6. The following congenital infection is associated with diabetes (type 1) in later life:
   a) Coxsackie B 3
   b) Coxsackie B 4
   c) CMV
   d) Rubella
   e) Mumps

7. A 10-year-old boy appears with history of purulent discharge from the left ear for the last 5 days. Past medical history reveals that a tympanostomy tube was placed in his left ear 12 months ago due to recurrent purulent left otitis media. The child is afebrile. He denies any history of headache, dizziness, and vomiting. He likes to swim. He is doing well in school. Physical examination reveals purulent yellowish discharge from the left ear through tympanostomy tube. The most common organism responsible for discharge through tympanostomy tube is:

a) Staphylococcus aurius
b) Streptococcus pneumoniae
c) Staphylococcus epidermidis
d) Pseudomonas aeruginosa
e) Candida albicans

8. A 3.5 kg baby who is full term, AGA (appropriate of gestational age) was born by NSVD with a Apgar score 7 at 1 minute and 8 at 5 minutes. The child developed mild respiratory distress and placed under oxyhood with 40% oxygen. Chest X-ray reveals TTNB (transient tachypnea of newborn). Lung fluid is absorbed after birth mostly by:
a) Lymphatics
b) Aortic circulation
c) Superior vena cava
d) Pulmonary circulation
e) Inferior vena cava

9. A boy is affected with a genetically transmitted disease. He has one brother who is not affected. He has two sisters, one is affected and other is not affected. His father is normal but the mother has the disease. His mother's sisters (aunt) are all affected but the mother's brothers are not affected. His father's siblings are not affected. His maternal grandfather was affected but maternal grandmother was normal. The disease is most likely transmitted:
a) X-linked recessive
b) X-linked dominant
c) Autosomal dominant
d) Autosomal recessive
e) Multifactorial

10. A postmature newborn was admitted to NICU with tachypnea. The newborn was delivered by NSVD with Apgar scores of 9 and 9 at 1 minute and 5 minutes respectively. A chest X-ray revealed normal findings. Complete blood count (CBC) revealed central hematocrit 72 with mild thromocytopenia but the rest of the result was within normal limit. Partial exchange transfusion was performed with normal saline through umbilical vein. This procedure may reduce the following problems except:
a) Speech deficits
b) Decreased IQ and school problems
c) Abnormal fine motor abnormalities
d) NEC (necrotizing enterocolitis) and feeding problem
e) Other neurologic abnormalities

11. A newborn was diagnosed with congenital hydrocephalus due to aqueductal stenosis. Ventriculoperitoneal shunt was placed. The baby developed fever 3 days after surgery. Physical examination revealed erythema of scalp over shunt. Shunt was removed. S. epidermidis was isolated in blood and CSF cultures. Vancomycin was given. Most infections are due to:
a) Intraoperative contamination of surgical wound by skin flora
b) Preoperative infection
c) Postoperative infection due to contamination and poor wound handling
d) Shunt is infected secondary to primary systemic infection
e) Meningitis causing shunt infection

12. A child is diagnosed with seborrheic dermatitis and is treated with topical corticosteroid. The parents are upset because the child is not improving clinically. Most likely diagnosis:
a) Eczema
b) Psoriasis
c) Pityriasis rosea
d) Granuloma annulare
e) Histiocytosis X

13. RPR tests were performed on 75 newborns to rule out congenital syphilis. 5 newborns had positive RPR test results and they were diagnosed with congenital syphilis (A). 3 newborns had negative RPR test results but they were diagnosed with true congenital syphilis (C). 11 newborns had positive RPR test results but they were not diagnosed with congenital syphilis (B). The remaining 56 newborns had negative RPR test results and they were not diagnosed with congenital syphilis (D). Positive predictive value:
    a) 62.5%
    b) 83.5%
    c) 31%
    d) 94.9%
    e) 81.3%
    f)

14. The following statements are true about encopresis except:
    a) It is normal up to 5 years of age or equivalent developmental level.
    b) More common in males than females
    c) More than 1% school-aged children are affected.
    d) Chronic constipation is an etiologic factor.
    e) Educating and assisting parents to re-establish normal toileting for child is important in therapeutic intervention

15. A full-term newborn was intubated in the delivery room due to perinatal asphyxia. Apgar scores were 1 and 2 at 1 minute and 5 minutes respectively. Sarnat staging of hypoxic ischemic encephalopathy includes all of the following except:
    a) CT scan or MRI
    b) Muscle tone
    c) Tendon reflexes
    d) Level of consciousness
    e) EEG

16. A 16-year-old girl appears with left breast mass. She noticed the mass 7 days ago. The mass is non-tender and is located in subareolar area. She denies any history of discharge from the nipple. Most likely diagnosis:
    a) Lipoma
    b) Fibroadenoma
    c) Carcinoma
    d) Epithelioma
    e) Sebaceous cyst

17. A child was brought to the ER with history of drowning in a swimming pool. The child was resuscitated at the scene by emergency technicians. However, the child was pronounced dead in the ER upon arrival. Most common cause of poor success rate for pediatric prehospital CPR (cardiopulmonary resuscitation):
    a) Incompetent emergency technicians
    b) Poor resuscitation techniques
    c) Faulty instruments
    d) Delayed response to a emergency call
    e) Specific cause of pediatric cardiopulmonary failure

18. Most common combination of acid base disturbances:
    a) Metabolic acidosis with respiratory alkalosis
    b) Metabolic acidosis with respiratory acidosis
    c) Metabolic alkalosis with respiratory acidosis
    d) Metabolic alkalosis with respiratory alkalosis
    e) Renal tubular acidosis with respiratory alkalosis

19. A pregnant mother wanted to know about the contraindications of breast feeding. She is diagnosed with active tuberculosis (TB). Breast-feeding is contraindicated in all of the following maternal conditions except:
    a) Severe neuroses or psychoses
    b) AIDS

c) Mastitis
d) Active TB
e) Substance abuse

20. Sucking and swallowing coordination usually appear in a normal premature newborn (gestational age):
a) 28 week
b) 30 week
c) 32 week
d) 34 week
e) 36 week

21. Prenatal sonogram of a pregnant mother reveals gastroschisis of the fetus. Newborn was delivered by NSVD (normal spontaneous vaginal delivery) with Apgar scores 9 and 9 at 1 and 5 minutes respectively. The true statement about gastroschisis:
a) 90% of cases are associated with intestinal atresia.
b) Umbilical cord is attached to the abdominal wall immediately to the right of the defect.
c) Small intestine is foreshortened.
d) Covering sac is found.
e) Small size of abdominal cavity

22. A young male high school football player wanted to know about the effects of anabolic steroid use. He wants to improve muscle mass and strength. All of the following statements are true about anabolic steroid use except:
a) Final height is reduced.
b) Ultimate muscle mass and strength improve with normal caloric intake and without exercise
c) Gynecomastia can occur
d) Atrophic testes may develop
e) May decrease HDL and increase LDL cholesterol levels.

23. A newborn appears with vomiting, diarrhea, and jaundice. Physical examination reveals cataract and hepatosplenomegaly. Urinalysis reveals reducing substance in urine. Preliminary diagnosis is galactosemia. The following statements are true about galactosemia except:
a) Elimination of galactose from diet invalidates enzyme assay.
b) Decreased galactose 1-phosphate uridyl transferase activity
c) Elevated galactose 1-phosphate level
d) Cataract is due to increased galactitol.
e) Never do galactose tolerance test

24. A 14-year-old boy in 6th grade is doing poorly in all subjects. He was born in USA. Parent denies history of drug use. Physical examination reveals bilateral non-nodular enlargement of testes but normal pubertal development. The boy is mentally retarded. The definitive diagnostic study includes:
a) Hormonal studies (e.g., testosterone level)
b) Ultrasonographic studies of testes
c) MRI of testes
d) CT-scan of testes
e) DNA analysis

25. A newborn was delivered by NSVD with Apgar scores of 8 and 9 at 1 and 5 minutes respectively. Maternal history of polyhydramnios was recorded in the chart. Resident physician in the delivery room noted profuse esophageal secretions (e.g., about 25-30 mL). This clinical condition is mostly associated with other anomalies except:
a) Cardiac
b) Neurologic
c) Gastrointestinal
d) Musculoskeletal
e) Renal

26. A 18-month-old boy was brought to the ER with history of fever (102°F). He has been crying for the last 24 hours. Mother denies history of vomiting and URI (upper respiratory infections). The boy attends a daycare center regularly. Physical examination reveals redness and absence of light reflex in the left tympanic membrane. Preferred therapy includes:
   a) Decongestants
   b) Antihistamines
   c) Corticosteroids
   d) Trimethoprim-sulfamethoxazole
   e) Amoxicillin

27. A 5-year-old boy was brought to the ER with a history of cat bites on the face. The incident happened 2 hours ago while the child was playing with the cat at home. Physical examination reveals minor wounds on the face. Most common organism in cat-bite wounds:
   a) P. multocida
   b) Eikenella corrodens
   c) S. aureus
   d) S. epidermidis
   e) S. moniliformis

28. The parents of a 12-month-old boy moved to Florida from New York. The routine physical examination reveals palpable right testis in the inguinal canal but the left testis is descended and normal in size. Difference between a retractile testis and an undescended testis is made by the following finding:
   a) Retractile testis has an empty scrotum.
   b) Retractile testis is larger than that of undescended testis
   c) Retractile inguinal testis can be pushed down into the scrotum
   d) Scrotum is fully formed in undescended testis
   e) Sonogram findings can distinguish between retractile and undescended testes.

29. A 12-year-old boy appears with history of pain, limping, and swelling in the lower end of left thigh. The symptoms started 2 weeks ago while he was playing soccer game. He had history of trauma during the game. Physical examination reveals swelling, redness, and tenderness in the lower left thigh. X-ray of left femur reveals ‘sunburst’ appearance. Most likely associated condition in this clinical presentation:
   a) Neuroblastoma
   b) Neurofibroma
   c) Osteoid osteoma
   d) Ewing’s sarcoma
   e) Retinoblastoma

30. A 2-month-old boy came for routine check up in pediatric clinic. He is due for immunization. The boy is healthy and asymptomatic. Mother refused routine immunization to the child. Physician failed to convince the mother. Finally, social worker spoke to the mother. However, mother does not want any immunization for her child. The appropriate step should be:
   a) Do not give immunization
   b) Immunization must be given
   c) Give another appointment for immunization.
   d) Call the hospital police to talk to the mother
   e) Call the CWA (child welfare agency) to talk to the mother

31. A child releases object to his mother. He can pick up pellet with unassisted pincer movement of forefinger and thumb. He can make postural adjustment to dressing. He can walk by holding hand, says a few words besides “mama” and “dada”. He plays simple ball games. He was unable to build a tower of 2 to 3 cubes. The developmental age of this child:
   a) 9-month-old
   b) 10-month-old
   c) 12-month-old

d) 15-month-old
e) 18-month-old

32. A 6-year-old girl was brought to the ER after drowning. The girl expired in the ER despite adequate resuscitation measures. The following statements are true about prevention of drowning and near-drowning except:
a) Swimming lessons to children less than 8 years old are ineffective.
b) Swimming pools should be adequately fenced on all four sides with self-latching gates.
c) Education and adequate fencing can prevent majority of drowning in younger children.
d) Teenagers should avoid alcohol and drugs.
e) Pool alarm is not effective and pool covers can trap a child underneath.

33. A child was diagnosed with retinoblastoma. He received radiotherapy. Most common second tumor may appear in this patient:
a) Neuroblastoma
b) Hodgkin disease
c) Leukemia
d) Lymphoma
e) Soft-tissue sarcomas

34. An adolescent boy was brought to the ER by his friend. The patient was comatose but was breathing on his own. The heart rate was irregular and the BP (blood pressure) was low. During examination, the patient developed generalized convulsion. After the convulsion was stopped, hematemesis and diarrhea were noted. His friend did not know what happened to him. However, friend noticed initially that the patient had euphoria, ataxia, and distorted body image causing panic reaction. He was using abusive language. Most common cause for the clinical manifestations:
a) Mushroom intoxication
b) Jimsonweed intoxication
c) Marijuana use
d) Alcohol use
e) PCP (phencyclidine) use

35. A girl is affected with genetically transmitted disease. She has one brother and one sister. Both of them are not affected. Her father is affected with the disease but her mother is normal. Her father's one brother (uncle) and one sister (aunt) are normal. Her mother's siblings and parents are normal. Her paternal grandfather had the disease but paternal grandmother was normal. Her cousins i.e., uncle's (father's brother) siblings are normal. The disease is most likely transmitted:
a) Autosomal dominant
b) Autosomal recessive
c) X-linked dominant
d) X-linked recessive
e) Multifactorial

36. A boy is admitted to PICU (pediatric intensive care unit) for bacterial pneumonia. He is receiving intravenous antibiotic therapy. The boy was admitted previously for meningitis. Past medical history revealed recurrent otitis media and herpes infection. Physical examination reveals bilateral rales and eczematous skin lesions. Blood test result reveals thrombocytopenia. All of the following statements are true for this disease except:
a) Bone marrow transplantation is effective
b) Autosomal recessive
c) Death occurs due to infection or bleeding
d) Elevated IgA and IgE
e) Thrombocytopenia is due to intrinsic platelet defects.

37. A 2-year-old girl was admitted for intestinal obstruction. The surgery was performed. The child was kept NPO (nothing per mouth). Intravenous hydration was provided. The most common complication of fluid therapy during and after surgery:

a) Dehydration
b) Overhydration
c) Hypoglycemia
d) Hypernatremia
e) Hypokalemia

38. A 3-year-old boy appeared in the ER with pallor, lethargy, irritability, dehydration, and oliguria. These symptoms and signs are preceded by acute gastroenteritis (e.g., vomiting, diarrhea with bloody stools) for the last 5 days. Physical examination reveals hepatosplenomegaly, edema, and petechiae. The following statements are true about this clinical condition except:
a) Renal failure does occur.
b) Enteropathogenic E. coli is the most common organism
c) Endothelial cell injury is the primary event in the pathogenesis.
d) Peritoneal dialysis is indicated.
e) Coombs test is positive.

39. A child was brought to a clinic by her mother with history of craving for salt, weakness, muscle-wasting, and hyperpigmentation (in face, hand) for the last 3 months. Mother also noticed that suntan does not disappear on her body. Physical examination reveals hypotension, several hyperpigmented spots over the face, hands, and genitalia. Which of the following serum electrolyte results appropriate for this disease condition?
a) Normal Na, normal Cl, normal K, normal renin
b) Normal Na, low Cl, normal K, normal renin
c) Low Na, low Cl, normal K, normal renin
d) Low Na, low Cl, high K, high renin
e) Low Na, normal Cl, low K, low renin

40. A 16-year-old boy appears with history of bilateral gynecomastia for the last 1 year. He has mental retardation and learning disorder. He is shy. He was arrested previously for antisocial activities. Physical examination reveals tall, slim, underweight, long legs, less facial hair, and small testes. All of the following statements are true in this clinical condition except:
a) Most cases are associated with advanced maternal age.
b) Extra X chromosome is mostly maternal origin than that of paternal origin.
c) Meiotic nondisjunction of an X chromosome is a common cause.
d) Azoospermia is a common finding.
e) Breast cancer may develop.

41. A newborn male appears with rapid heart rate. He is afebrile. In room air, oxygen saturation is 100% recorded by pulse oxymeter. Heart rate is 260 per minute, respiratory rate is 46 per minute, and temperature is 98.6°F. Management of this patient includes all of the following except:
a) Verapamil
b) Adenosine
c) Ice pack over face
d) DC cardioversion
e) Propranolol

42. Blood cultures were performed on 66 newborns to rule out sepsis. 10 newborns had positive blood culture results and they were diagnosed with sepsis (A). 20 newborns had negative blood culture results but they were diagnosed with sepsis (C). 6 newborns had positive blood culture results but they were not diagnosed with sepsis (B). 30 newborns had negative blood culture results and they were not diagnosed with sepsis (D). Negative predictive value:
a) 33%
b) 60%
c) 83%
d) 50%
e) 70%

43. A 10-year-old healthy girl was brought to a clinic by her mother for routine physical examination. Mother asked the doctor about the normal caloric distribution should be in regular food intake:
    a) Protein 50%, carbohydrate 40%, fat 10%
    b) Protein 80%, carbohydrate 20%, fat 0%
    c) Protein 5%, carbohydrate 60%, fat 35%
    d) Protein 25%, carbohydrate 50%, fat 25%
    e) Protein 15%, carbohydrate 55%, fat 30%

44. A 14-year-old girl has been suffering from asthma for the last 3 years. She is using albuterol pump daily. She also used steroid occasionally. Pulmonary function test (PFT) was performed. Which of the following result is appropriate for this patient?
    a) Increased residual volume (RV), decreased vital capacity (VC), decreased forced expiratory volume ($FEV_1$)
    b) Decreased RV, decreased VC, decreased $FEV_1$
    c) Decreased RV, increased VC, decreased $FEV_1$
    d) Increased RV, increased VC, increased $FEV_1$
    e) Decreased RV, decreased VC, increased $FEV_1$

45. A child appears in the ER with history of fever (102°F), jaundice, and abdominal pain for the last 12 hours. He had liver transplantation 2 weeks ago. Liver specimen was properly matched with the child prior to surgery. Mother denies any URI symptoms and sore throat. Physical examination reveals jaundice and abdominal tenderness. Most likely diagnosis:
    a) Hepatitis
    b) CMV
    c) Toxoplasmosis
    d) Cholangitis
    e) Liver graft rejection

46. A 9-year-old girl is a known diabetic patient. Normal caloric requirement for this patient (Kcal/kg body weight):
    a) 125 – 100
    b) 150 – 125
    c) 100 – 75
    d) 75 – 50
    e) 25 – 50

47. A full-term newborn boy was admitted to NICU (neonatal intensive care unit) with mild respiratory distress. He was born by cesarean section with Apgar scores 8 an 8 at 1 and 5 minutes respectively. Initially baby was placed under 40% oxygen by oxyhood. Oxygen saturation was 85% by pulse oximeter. Physical examination reveals tachypnea but no heart murmur. Then, oxygen was increased to 50%. Chest X-ray reveals increased pulmonary vascular markings. ABG: pH 7.30 / $Pco_2$ 42 / $Po_2$ 65 in 40% oxygen. Umbilical arterial and venous lines were placed. $Po_2$ is higher in umbilical venous line than that of arterial line. Repeat CXR reveals umbilical venous line is in the right atrium and umbilical arterial line at T8 level. Most likely diagnosis:
    a) TTNB (transient tachypnea of newborn)
    b) TGA (transposition of great arteries)
    c) VSD
    d) ASD
    e) TAPVR (total anomalous pulmonary venous return)

48. A newborn baby girl weights 8 lbs and her height is 21 inches. Her height will be 42 inches at:
    a) 1 year
    b) 2 years
    c) 3 years
    d) 4 years
    e) 5 years

49. A 6-year-old boy appears with waddling gait and proximal muscle weakness. Past medical history revealed that the boy was normal until 2 years of age. Subsequently the boy developed lordotic posture and used his hands to climb up the legs (Gowers sign). Physical examination reveals pseudohypertrophy of calf muscles and wasting of thigh muscles. However, extraocular muscles and distal muscle functions are normal. All of the following statements are true in this disease except:
    a) Autosomal recessive
    b) Cardiomyopathy is present.
    c) Very high CPK level
    d) No muscle pain and spasm
    e) Deficiency of dystrophin (muscle protein)
50. A full-term newborn developed hypocalcemia. He received intravenous calcium. Chest X-ray revealed absence of thymus. All of the following statements are true in this disease except:
    a) Hypoplasia of thyroid gland
    b) Hypoplasia of parathyroid gland
    c) Truncus is common.
    d) Renal anomalies are common.
    e) Velopharyngeal insufficiency is common.

51. A pregnant woman is about to deliver a baby. She had history genital herpes. Genital examination reveals active herpetic lesions. All of the following statements are true except:
    a) Amniocentesis is contraindicated.
    b) Culture of baby's eyes, nose, mouth, urine, stool at 48 hours.
    c) Cesarean delivery is not indicated.
    d) The chances of infection is higher in primary than recurrent infection.
    e) Acyclovir-resistant herpes is treated with foscarnet.

52. A full-term newborn is admitted to regular nursery. Initially the baby was hypothermic (temperature 96°F) and he was placed in isolette. Physical examination reveals irregular, rubbery-to-firm nodule with violet to reddish color over the buttock, back, and upper extremities. Next appropriate step in management:
    a) Surgical consult
    b) Biopsy
    c) X-ray
    d) Dermatology consult
    e) Observation and reassurance

53. The following statements are true about SIDS (sudden infant death syndrome) except:
    a) Both prone and side sleeping increase risk of SIDS.
    b) All babies should sleep in supine position including infants with micrognathia and obstructive sleep apnea.
    c) Most common cause of postneonatal death 1 mo – 1 yr of age in developed countries.
    d) Future SIDS victims may have repeated fatigue during feeding and profuse sweating during sleeping.
    e) Caffeine and theophylline decrease apnea and improve respiratory pattern. However, no medication can prevent SIDS.

54. Routine physical examination of a full-term male newborn reveals cryptorchidism and abdominal muscle deficiency. Renal sonogram and VCUG (voiding cystourethrography) studies reveal obstructive uropathy and dysplastic kidneys. Most common associated anomaly in this syndrome:
    a) Cardiac
    b) Pulmonary
    c) Gastrointestinal
    d) Musculoskeletal
    e) Endocrine

55. All of the following medications can cause neutropenia except:
    a) Semisynthetic penicillins
    b) Phenothiazine
    c) Prophylthiouracil

d) Phenytoin
e) Vancomycin

56. Fluoride requirement in mg per day in breast-fed infant if community water contain less than 0.3 ppm fluoride:
a) 0.25
b) 0.50
c) 0.75
d) 0.10
e) 0.00

57. A full-term girl was born by NSVD. Physical examination performed within 2 hours after birth revealed swelling over the left parietal bone area. All of the following statements are true about this clinical diagnosis except:
a) Limited to one bone only
b) Resolve within 24 hours
c) Linear skull fracture may be present
d) Phototherapy may be required for jaundice
e) Begin to calcify end of second week

58. A 6-month-old child was brought to a clinic by his mother for routine follow-up. Mother gives milk if baby cries. Baby cries about 8 to 10 times per day. Average daily number of feeding per day for this baby should be:
a) 4 – 5
b) 5 – 6
c) 3 – 4
d) 6 – 8
e) 8 – 10

59. Coombs test was performed on 66 newborns for AO incompatibility and jaundice. 10 newborns had positive Coombs test and jaundice (A). 20 newborns had negative Coombs test despite jaundice (C). 6 newborns had positive Coombs test but absence of jaundice (B). 30 newborns had negative Coombs test and absence of jaundice (D). Sensitivity of Coombs test:
a) 95%
b) 33%
c) 60%
d) 62%
e) 83%

60. A 17-year-old male athlete suddenly collapsed while playing football. He was brought to the ER. He expired despite adequate CPR. Past medical history was unremarkable. Autopsy was performed. He had no history of smoking, drugs, and alcohol. Most likely cause of death:
a) Critical aortic stenosis
b) Mitral valve prolapse
c) Aortic incompetence
d) Hypoplastic left heart syndrome
e) Long QT interval syndrome

61. A 30-year-old man has genetically transmitted disease (homozygous). His wife is normal. They have 2 sons and 3 daughters. They are carriers of the disease (heterozygous). The man's parents were the carrier. He has one sister who is not affected, other sister is a carrier, and one brother is affected and other brother is a carrier. His paternal grandmother was a carrier and paternal grandfather was not affected. His maternal grandfather was a carrier and maternal grandmother was not affected. The disease is most likely transmitted:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant

e) Multifactorial

62. A 9-year-old boy was admitted to PICU with the diagnosis of bacterial meningitis. He had history of fever (103°F) for the last 3 to 5 days. He was treated with ibuprofen for the diagnosis of URI. The boy subsequently became unresponsive and was placed on mechanical ventilator. He was receiving dopamine drip for hypotension. A step-by-step progression from infection to death due to sepsis:
a) Infection, sepsis, SIRS (systemic inflammatory response syndrome), severe sepsis, septic shock, MODS (multiple organ dysfunction syndrome), and death.
b) Infection, SIRS, sepsis, severe sepsis, septic shock, MODS, and death.
c) Infection, MODS, sepsis, severe sepsis, septic shock, SIRS, and death.
d) Infection, sepsis, severe sepsis, septic shock, SIRS, MODS, and death.
e) Infection, sepsis, severe sepsis, SIRS, septic shock, MODS, and death.

63. A male adolescent is diagnosed with primary hypogonadism. Physical examination reveals short stature, antimongoloid slant, hypertelorism, small chin, ptosis, undescended testes, grade 2/6 systolic murmur over the left upper sternal border, and mental retardation. All of the following statements are true about this syndrome except:
a) Autosomal dominant
b) 90% mentally retarded
c) Pulmonic stenosis
d) Associated with neurofibromatosis
e) Human growth hormone improves growth velocity

64. A 3-day-old male was brought to a clinic for the first routine check-up. Mother noticed that a small amount of milk comes out of the nose in each feeding. However, the boy is feeding well with strong suck. Physical examination reveals a small midline posterior cleft palate which was not diagnosed at birth. Mother wants to know the approximate time to repair cleft palate:
a) 5 years
b) 3 years
c) Before 1 year
d) 3 months
e) 7 days

65. A 6-year-old girl appears in the ER with a pustule in the right upper extremity. Mother denies history of trauma and she has no pets at home. However, the girl goes to her friend’s house and they have dogs and cats. The girl is afebrile. Physical examination reveals painless and non-itchy erythematous pustule over the right upper extremity. In addition to that, both axillary and cervical lymph nodes were enlarged, mildly erythematous, and slightly tender. All of the following statements are true about this disease except:
a) Indirect immunofluorescent assay (IFA) can make the diagnosis
b) Antibiotics should be given to all patients.
c) Organism is identified by PCR
d) Bartonella henselae is the causative organism.
e) Incision and drainage are not indicated for nonsuppurative nodules.

66. A 12-year-old girl noticed her abnormal facial features when she looked at the mirror in the morning and she started to cry. Her mother noticed few blisters over the right ear. She was brought to a clinic. Physical examination reveals right facial paralysis and few blisters are noted on the right ear and ear canal. All of the following statements are true in this syndrome except:
a) Facial nerve will recover completely
b) Caused by herpes virus.
c) Acyclovir is effective.
d) Corticosteroids are given.
e) May involve 8th cranial nerve

67. A 18-month-old boy was recalled in the clinic for increased lead level 19 μg/dL. The boy is asymptomatic. Mother stated that the apartment was not painted for the last 8 years. All of the following statements are true about lead poisoning except:

a) Symptoms always depend on lead level
b) Separate the child from source is important.
c) Hypochromic microcytic anemia can occur.
d) Repeat the blood lead level immediately
e) Calcium EDTA is used when lead level is 45 or above.

68. Infant is diagnosed with large cavernous hemangioma. CBC results reveal thrombocytopenia but the rest of CBC results are WNL (within normal limit). All of the following statements are true in this syndrome except:
a) Surgical excision may be required.
b) Corticosteroids are effective.
c) Laser photocoagulation is effective.
d) Interferon alpha-2 is effective.
e) Bone marrow has low platelet count.

69. A male child developed rapid onset of double vision, difficulty in swallowing and talking for the last 6 hours. The child was completely asymptomatic prior to that. The child was brought to the ER. He was intubated because of respiratory difficulty. Mother denies history of trauma. All of the following statements are true in this disease condition except:
a) Botulinum toxin is distributed hematogenously
b) Keep NPO (nothing per mouth) and start TPN (total parenteral nutrition)
c) Antibiotics are not used in uncomplicated cases especially aminoglycosides.
d) Human-derived Botulinum antitoxin (BIG-IV) is the specific therapy.
e) Cathartics should not be used.

70. Which of the following statement is true about anthrax?
a) Respiratory anthrax is the most common.
b) Anthrax vaccine can be given to children.
c) Ciprofloxacin must be used in children.
d) Spore is the infective form
e) Erythromycin is the drug of choice.

71. Which of the following statements is true about smokeless tobacco?
a) Smokeless tobacco is not harmful.
b) May cause physical dependence on nicotine if used regularly.
c) Does not cause oral lesions.
d) Does not cause cancer.
e) Can be used as substitute for smoking cigarettes.

72. Most common site of injury in swimmers?
a) Head
b) Neck
c) Shoulder
d) Chest
e) Abdomen

73. The organism which produces enterotoxin:
a) S. epidermidis
b) E. coli
c) Listeria
d) RSV
e) Streptococcus pneumoniae

74. A child is diagnosed with ITP (idiopathic thrombocytopenic purpura). Immunoglobin responsible for ITP:
a) IgM
b) IgG
c) IgA

d) IgE
e) IgD

75. Most common clinical manifestation of child abuse:
a) Hot water burn
b) Subdural hematoma
c) Rupture liver
d) Spiral fracture
e) Bruises

76. Side effects of furosemide on premature infants:
a) Apnea
b) IVH (intraventricular hemorrhage)
c) Edema
d) Deafness
e) Hypertension

77. Physical examination of a newborn reveals hypoplastic nails. Medication used by mother can cause this problem:
a) Lithium
b) Thalidomide
c) Phenytoin
d) Dicoumarol
e) Phenobarbital

78. Most common type of infratentorial brain tumor in a 3-year-old boy:
a) Gliomas (chiasmal)
b) Pineal region tumors
c) Ependymoma
d) Cerebellar astrocytoma juvenile pilocytic) and medulloblastoma
e) Craniopharyngioma

79. A child is diagnosed with scleroderma. Diagnosis is made:
a) ESR
b) IgG
c) Anti-DNA
d) Clinical features
e) IgM

80. A 1-day-old boy is diagnosed with nonketotic hyperglycinemia. Elevated glycine level is more specific:
a) Blood
b) Urine
c) CSF
d) Bone marrow
e) Lung fluid

81. Most common type of CP (cerebral palsy):
a) Spastic monoplegia
b) Spastic diplegia
c) Spastic quadriplegia
d) Spastic hemiplegia
e) Spastic quadriplegia with blindness

82. Marijuana intoxication can cause:
a) Increases short-term memory
b) Increases temperature

c) Decreases heart rate
d) Increases bronchospasm
e) Reduces intraocular pressure

83. A child is diagnosed with autosomal dominant polycystic kidney disease (ADPKD). He suddenly became lethargic and developed seizure activities. Head CT scan reveals:
a) Brain cyst
b) Brain abscess
c) Normal
d) Subarachnoid hemorrhage
e) Brain tumor

84. Atypical lymphocyte is found in all of the following diseases except:
a) Hepatitis A
b) Infectious mononucleosis
c) Rubella
d) Toxoplasmosis
e) CMV

85. Most common organism responsible for nonbullous impetigo:
a) S. aureus
b) C. albicans
c) Herpes
d) S. epidermidis
e) Pseudomonas

86. A child was brought to the ER for a severe injury to the right eye while playing baseball. Physical examination reveals a red and swollen right eye. Next step in management:
a) Make an appointment in eye clinic tomorrow
b) Sonogram of right eye
c) Remove foreign body
d) Irrigation of right eye
e) Patch eye and refer patient to an opthalmologist immediately

87. A mother of a 6-month-old boy wants to know the amount of formula feeding in ounce(oz) in each feeding:
a) 2 – 3
b) 6 – 7
c) 4 – 5
d) 5 – 6
e) 7 – 8

88. Coombs test was performed on 66 newborns for BO incompatibility and jaundice. 10 newborns had positive Coombs test and jaundice (A). 20 newborns had negative Coombs test despite jaundice (C). 6 newborns had positive Coombs test but absence of jaundice (B). 30 newborns had negative Coombs test and absence of jaundice (D). Specificity of Coombs test:
a) 95%
b) 33%
c) 60%
d) 62%
e) 83%

89. A 5-year-old girl was brought by her mother to a genetic clinic. The girl's father is affected with a genetically transmitted disease. The girl's mother is not affected. Father has one brother and two sisters. They are not affected. The girls paternal grandfather is not affected. The girls paternal grandmother's brother is affected. The girl has two brothers. They are not affected. The disease is most likely transmitted.
a) Autosomal recessive

b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

90. A child was brought to the ER after a car accident. There was nobody to give a proper history. The child was cyanotic and unresponsive. He was intubated immediately. The child's oxygen saturation improved to 100% but no spontaneous respiration was noted. Physical examination revealed hypotension, multiple bruises, abdominal distension, and obvious femoral fracture. The surgeon suspected splenic rupture, which was confirmed by a CT scan. The family could not be contacted. The next appropriate step in management would be to:
a) Wait for the parents to arrive and give consent prior to surgery.
b) The surgeon is getting ready to do the surgery but decided to wait at least 2 hours for his parents to arrive.
c) Get consent from the social worker involved in the case.
d) Get consent from a neighbor who was contacted by the social worker.
e) Surgeon should do the procedure without waiting to obtain a consent for the benefit of the patient.

91. Platelet counts are abnormal in which type of von Willebrand disease:
a) Type 1
b) Type 2B
c) Type 3
d) Type 2A
e) Type 2N

92. Identify the true statement about the diagnosis of Staphylococcal toxic shock syndrome:
a) Production of toxic shock syndrome toxin (TSST-1) by an isolette is useful.
b) Clinical presentation is non-specific.
c) Cultures are usually positive from the site of infection.
d) Blood cultures are usually positive.
e) Majority of nonmenstrual cases do not produce TSST-1.

93. A 17-year-old girl never experienced menstruation. She is an athlete. She is usually very busy in her basketball practice. She is tall and well developed. She experienced a headache occasionally. Headache was relieved by acetaminophen. Most common cause of amenorrhea in this patient:
a) Pregnancy
b) Pituitary tumor
c) Turner syndrome
d) Imperforate hymen
e) Ovarian tumor

94. A boy is diagnosed with proximal renal tubular acidosis (RTA) or type II. Subsequently he developed rickets. Most common cause of rickets in this patient:
a) Loss of vitamin D in urine
b) Primary hypoparathyroidism
c) Loss of calcium in stool
d) Loss of bicarbonate in stool
e) Phosphaturic hypophosphatemia

95. Mode of inheritance in retinoblastoma:
a) Autosomal dominant
b) Autosomal recessive
c) X-linked dominant
d) X-linked recessive
e) Multifactorial

96. Preferred diagnostic test for DDH (developmental dysplasia of hip) or CDH (congenital dislocation of hip):

a) X-ray hip joints
b) Nuclear bone scan
c) Ultrasonography
d) CT-scan
e) Ortalani test

97. Oxygen dissociation curve appears shift to right (decrease in affinity, increase of oxygen release to tissue) in:
a) Alkalosis
b) Hyperthermia
c) Hypothermia
d) Decrease $CO_2$
e) Decrease ATP

98. Heart disease is most common:
a) Trisomy 21
b) Trisomy 18
c) Trisomy 13
d) Turner syndrome
e) Trisomy 22

99. Circumcision is indicated:
a) Hypospadius
b) Chordee
c) Micropenis
d) Chordee with hypospadius
e) UTI (urinary tract infection)

100. Opthalmologic examination reveals posterior subcapsular cataract, most likely cause:
a) Rubella
b) Steroid-induced
c) Diabetes mellitus
d) Galactosemia
e) Wilson's disease

---

A 8-year-old boy appears in the ER with history of URI (upper respiratory infection) for the last 5 days. He received acetaminophen for fever up to 103°F. He does not want to eat. His activities are decreased significantly. For the last 12 hours, his fever went up to 104°F despite acetaminophen therapy. He vomited yellowish material twice. He is irritable, lethargic, and complains of back pain. He denies sore throat and pain in ears. He denies any history of trauma. He is not allergic to any medication. Past medical history is unremarkable.

Vital signs: Temperature 105°F (40.5°C),
heart rate 120 per minute (normal 70 – 110),
respiratory rate 20 per minute (normal 17 – 23),
blood pressure 100/60 (50th percentile).

101. Physical examination reveals:
a) Pharyngeal exudate
b) Redness in tympanic membranes
c) Rales in right lung
d) Nuchal rigidity
e) Abdominal tenderness

102. Investigation which leads to definitive diagnosis:
a) Audiometry
b) Abdominal X-ray

- c) Pharyngeal culture
- d) Sputum culture
- e) CSF

103. Test results reveal:
   - a) Conductive hearing loss
   - b) Dilated small intestine
   - c) Group A Streptococci
   - d) S. aureus
   - e) CSF: Gram stain positive for Gram positive cocci and culture positive for S. pneumoniae

104. The next step in management:
   - a) Intravenous antibiotics
   - b) Surgical consult
   - c) Oral antibiotics
   - d) Intravenous hydration
   - e) Bronchodilator therapy

105. The child is kept NPO (nothing per mouth). IV fluid should be given:
   - a) Two times of maintenance
   - b) One and half times of maintenance
   - c) One time maintenance
   - d) One half to two thirds of maintenance
   - e) One fourth of maintenance

---

A 6-year-old girl appears in the ER with history of persistent vomiting and headache for the last 48 hours. She had been vomiting once in the morning for the last 3 months before she went to school. Her personality changed for the last 4 months. She is more forgetful, irritable, and lethargic. Her performance in school deteriorated for the past 4 months. Her mother denies any history of fever, URI symptoms, or unusual eating habits. However, her headache improves after vomiting.

Vital signs: Temperature 98.6°F (37°C),
pulse rate 100 per minute (normal 80 – 120),
respiratory rate 21 per minute (normal 18 – 24),
blood pressure 96/58 (50th percentile)

106. Physical examination reveals:
   - a) Abdominal tenderness
   - b) Nystagmus
   - c) Dehydrated skin
   - d) Normal
   - e) Flank tenderness

107. The next step in management:
   - a) Upper GI series
   - b) Blood glucose test
   - c) MRI head
   - d) Urinalysis
   - e) Psychiatric evaluation

108. Definitive therapy includes:
   - a) Surgical resection of brain tumor
   - b) IV hydration and insulin
   - c) Surgical removal of intestinal obstruction
   - d) Antibiotics
   - e) Antidepressive drugs

109. If the patient is not treated, usual complication:
   a) Hydrocephalus
   b) DKA (diabetic ketoacidosis)
   c) Intestinal necrosis
   d) Hydronephrosis
   e) Schizophrenia

---

A 15-year-old girl appears with fever, malaise, and sore throat for the last 10 days. She developed abdominal discomfort for the last 1 to 2 days. She said that fever and sore throat are not getting better despite amoxicillin therapy for the last 48 hours. She developed rashes for the last 2 days.

Vital signs: Temperature 102.2°F (39°C),
pulse rate 88 per minute (normal 60 – 105),
respiratory rate 19 per minute (normal 17 – 21),
and blood pressure 110/80 (normal)

110. Physical examination may reveal all of the following except:
   a) Lymphadenopathy
   b) Splenomegaly
   c) Pharyngitis
   d) Tonsillitis
   e) Sinusitis

111. Laboratory findings may include all of the following except:
   a) Mild elevation of hepatic transaminases
   b) Increased heterophil antibody titer (IgM)
   c) Leukopenia is commonly noted.
   d) Lymphocytosis with atypical lymphocytes
   e) IgM antibody to viral capsid antigen

112. Therapy includes all of the following except:
   a) Rest
   b) Symptomatic therapy
   c) Antibiotic
   d) Corticosteroid may be used to reduce airway edema
   e) Stop athletic activity if spleen is enlarged to avoid splenic rupture

113. Most common organism:
   a) S. pneumoniae
   b) S. aureus
   c) S. epidermidis
   d) Pseudomonas
   e) Epstein-Barr Virus (EBV)

114. Complications include all of the following except:
   a) Splenic rupture
   b) Hepatic failure
   c) Guillain-Barre syndrome
   d) Reye syndrome
   e) Airway obstruction

115. Most dangerous complication:
   a) "Alice in Wonderland" syndrome
   b) Bell palsy
   c) Transverse myelitis

- d) Hemolytic anemia with a positive Coombs test
- e) Splenic rupture

---

A 1-day-old male child admitted to NICU from regular nursery with a history of vomiting five times for the last 24 hours. He was born by NSVD with Apgar scores of 8 and 9 at 1 and 5 minutes respectively. His birth weight was 8 lb. Maternal history was unremarkable. Sepsis work up was done. Ampicillin and gentamicin were given.

Physical examination:
Temperature 98.6°F (37°C), pulse rate 140 per minute (normal), respiratory rate 36 per minute (normal), and blood pressure 60/30 (normal). Present weight is 7 lb 14 oz; the newborn has no obvious signs of dehydration; abdomen is soft and nontender; normal genitalia; rest of the examination is unremarkable.

Laboratory findings:
CBC (Complete Blood Count): WBC 10,600 cells/mm3, hemoglobin/hematocrit 15/45, Platelet 250,000, polymorphs 45%, lymphocytes 55%
SMA 6: Low Na (130 mmol/L), low Cl 92, slightly low K 3.4, normal BUN 16 mg/dL, normal creatinine 0.5, normal bicarbonate 27 mmol/L
Urinalysis: RBC 2/hpf (normal), WBC 3/hpf (normal), few epithelial cells (normal), hyaline cast 1/hpf (normal), specific gravity 1.010 (normal), absence of bacteria, RBC cast and WBC cast.
Blood Culture: pending result,
Renin level: elevated

116. Most confirmatory test to make the diagnosis:
- a) Abdominal sonogram
- b) Upper GI series
- c) Barium enema
- d) Abdominal X-ray
- e) 17-hydroxyprogesterone level in serum

117. Definitive therapy includes:
- a) Pyloromyotomy
- b) Colostomy
- c) Hydration
- d) Surgical correction of malrotation
- e) Hydrocortisone (glucocorticoid) + mineralocorticoid + sodium supplementation

118. Prenatal diagnosis can be made by:
- a) CVS (chorionic villi biopsy) in 1st trimester
- b) Cannot be made because the condition develops after birth
- c) Sonogram reveals dilated large intestine
- d) Sonogram reveals dilated stomach shadow
- e) Sonogram reveals dilated small intestine

---

A 15 year old girl appears with short stature and primary amenorrhea. Chromosomal studies reveal 45, X. She is doing well in school.

119. The treatment for Turner syndrome includes all of the following except:
- a) Gonads should be removed surgically.
- b) A combination of oxandrolone (anabolic steroid) and growth hormone increases growth and final height.
- c) Testosterone is not useful.
- d) Estrogen therapy results in normal menstrual cycle.
- e) High protein diet does not increase the growth.

120. Her renal sonogram reveals horseshoe kidney and an echocardiogram reveals bicuspid aortic valve. These findings may result in:
    a) Liver failure
    b) Diminished growth
    c) Congestive cardiac failure
    d) Renal failure
    e) Adrenal failure

121. The girl went to a dentist for a dental procedure. The dentist should advise to the patient:
    a) Not to perform the procedure at all.
    b) No antibiotic prophylaxis
    c) Oral antibiotic prophylaxis
    d) Intravenous antibiotic prophylaxis
    e) Intramuscular antibiotic prophylaxis

122. The girl wants to know about her final height potential. The physician should advise:
    a) The height age should be more than bone age to achieve maximum height.
    b) She will be taller than all her friends by hormonal therapy.
    c) She will not grow at all despite therapy.
    d) She will be taller than her both parents after hormonal therapy.
    e) A patient with normal GH (growth hormone) and TSH (thyroid stimulating hormone) levels does achieve normal height.

123. Increased risk in offspring of a Turner Syndrome, if fertile:
    a) Turner syndrome
    b) Noonan syndrome
    c) Down syndrome
    d) Trisomy 18
    e) Trisomy 13

---

124. A 2-year-old boy was brought to the ER with a history of difficulty breathing and coughing for the last 2 days. His mother has asthma. Three other siblings do not have asthma. Mother denies any foreign body aspiration. Physical examination: afebrile, mildly tachypneic, wheezing is noted in the right chest, and the left lung sounds are clear. Chest X-ray reveals overdistended right lung, especially in expiratory film.
    Appropriate management should be:
    a) Bronchodilator
    b) Pulmonary physiotherapy
    c) Thoracotomy
    d) CPR (cardio pulmonary resuscitation)
    e) Removal of the bronchial foreign body

125. The most common enzyme deficiency in urea cycle defects:
    a) Ornithine transcarbamylase (OTC)
    b) Carbamylphosphate synthetase (CPS)
    c) N-acetylglutamate synthetase
    d) Arginosuccinic acid synthetase
    e) Arginosuccinic acid lyase

126. A 2-year old girl appears in the ER with history of several episodes of vomiting and diarrhea for the last 48 hours. Mother denies history of fever and URI symptoms. The girl was eating regular foods and was drinking milk and juice prior to vomiting and diarrhea. Physical examination reveals absence of tears, sunken eyes, dry mucous membranes, capillary refill more than 3 seconds and mild hypotension. The child weighs 12 kg.
    Serum electrolytes: Na = 135, K = 4.0, BUN = 30
    The next appropriate intravenous fluid therapy should be:
    a) 0.45% Nacl with 5% glucose water 100 mL/kg in emergency phase (1 hour)
    b) 0.9% Nacl 50 mL/kg in emergency phase

c) Ringer lactate 50 mL/kg in emergency phase
d) 0.9% Nacl with 5% glucose water 100 mL/kg over 24 hours
e) 0.9% Nacl 20 mL/kg over 20 minutes

127. A mother of a 12-month-old boy wants to know about solid-food intake in infants. All of the following statements are true except:
a) Physician should recommend a definite amount of given food.
b) Solid foods should be introduced about 4-6 months of age
c) Avoid excessive salt intake
d) Avoid food additives
e) Parents should not introduce new foods more often than every 1-2 weeks

128. A 12-year-old child died suddenly. He was taking which of the following medication:
a) Phenobarbital
b) Phenytoin
c) Tricyclic antidepressant
d) Lorazepam
e) Propranolol

129. A 25-year-old mother is pregnant. She had one child who was born with congenital heart disease. The risk of recurrence in this pregnancy:
a) 0.8%
b) 1% to 2%
c) 20% to 30%
d) 2% to 6%
e) 25% to 50%

130. The maximal activity of lactase enzyme appears in intestine of the fetus about:
a) 14th week
b) 20th week
c) 24th week
d) 32th week
e) 36th week

131. Beckwith-Wiedemann syndrome has the following features except:
a) Omphalocele
b) Macrocephaly
c) Macrosomia
d) Visceromegaly
e) Macroglossia

132. Premature babies achieve catch-up growth (weight) about:
a) 6 months
b) 12 months
c) 18 months
d) 24 months
e) 36 months

133. Management of a patient older than 1 year of age with a foreign body aspiration. All of the following statements are true except:
a) First, a blind sweep of mouth should be performed
b) Place them on their back
c) Rescuer kneels next to patient
d) Perform 6 to 10 abdominal thrust using heel of one hand, pushing upward and inward from midabdomen, midway between umbilicus and rib cage. If this fails, victim’s mouth should be opened by using tongue-jaw lift and a visualized foreign body should be removed.

e) Rescue breathing should be repeated before next abdominal thrust.

134. A 6-year-old boy was brought to the ER with history of severe diarrhea and vomiting for the last 3 days. He is lethargic. Father denies a history of fever and URI symptoms. The boy was completely asymptomatic prior to this episode. Mother stated that he went to his friends house 3 days ago. Physical examination reveals severe hypotension (40/20), tachycardia (heart rate 140 per minute), normal temperature 98.6°F (37°C), respiratory rate 22 per minute (normal), sunken eyes, no tears, dry mucous membrane, and hypoactive. The child weighs 24 kg.
Serum electrolytes: Na = 135, K = 3.5, BUN = 45
The next appropriate intravenous fluid therapy should be:
a) 0.45% NaCl with 5% glucose water 20 mL/kg over 1 hour in emergency phase.
b) 0.9% NaCl with 5% glucose water 100 mL/kg over 30 minutes in emergency phase.
c) Ringer lactate 50 mL/kg over 30 minutes
d) Ringer lactate 20 mL/kg over 20 minutes, if no improvement, give another 20 mL/kg over 20 minutes.
e) 0.9% Nacl with 5% glucose water 100 mL/kg over 6 hours

135. A newborn male weighs 7 lb. The boy will be 14 lb:
a) 5 months
b) 6 months
c) 7 months
d) 9 months
e) 12 months

136. Most common congenital foot deformity:
a) Talipes equinovarus
b) Developmental dysplasia of hip
c) Metatarsus adductus
d) Metatarsus abductus
e) Wide separation of first and second toes

137. A 9-year-old boy was brought to the ER after head injury. Head CT scan reveals basillar skull fracture. All of the following clinical presentations are true except:
a) Hemotympanum
b) CSF otorrhea
c) Battle sign
d) CSF rhinorrhea
e) Clear discharge from the ear

138. Most common clinical manifestation of congenital rubella:
a) Cataract
b) PDA
c) IUGR (intrauterine growth retardation)
d) Pulmonic stenosis
e) Sensorineural deafness

139. Management of a patient younger than 1 year of age with a foreign body aspiration. First to last sequence should be:
a) Abdominal thrusts, back blows, mouth open and remove foreign body.
b) Chest thrusts, back blows, mouth open and remove foreign body.
c) Back blows, chest thrusts, mouth open and remove foreign body.
d) Back blows, abdominal thrusts, mouth open and remove foreign body.
e) Abdominal thrusts, back blows, mouth open and remove foreign body.

140. The following statements are true in Klinefelter syndrome except:
a) Maternal age is advanced in most cases
b) Extra X is contributed more by mother than father

c) Behavioral or psychiatric problem may occur
d) Infertility is common
e) Higher incidence of breast cancer

141. The following statements are true in diabetes insipidus except:
a) Increased secretion of vasopressin
b) Damage of neurohypophyseal tract
c) Craniopharyngioma can cause diabetes insipidus when it is very large.
d) Gene is on chromosome 20
e) Occurs in neonatal asphyxia

142. A 17-year-old boy was brought to the ER by his friend in early Saturday morning. He was passing several loose stools for the last 6 hours. Physical examination reveals heart rate 45/minute, increased salivation, and constricted pupils. Most likely cause:
a) Atropine
b) Food poisoning
c) Tricyclic antidepressant
d) Cocaine
e) Acetylcholine

143. A child appears pale. The diagnosis of iron deficiency anemia was made. The correct hematologic findings should be:
a) Hemoglobin (10), MCV (70), reticulocyte (10%)
b) Hemoglobin (15), MCV (78), reticulocyte (2%)
c) Hemoglobin (8), MCV (45), reticulocyte (9%)
d) Hemoglobin (7.5), MCV (65), reticulocyte (1.9)
e) Hemoglobin (7), MCV (80), reticulocyte (16%)

144. A 10-year-old girl appears with pain in the right ear and right retroorbital area with headache for the last 24 hours. She denies history of trauma. Physical examination reveals right otitis media and inward deviation of the right eye.Most likely diagnosis:
a) Gradenigo’s syndrome
b) Brain hemorrhage
c) Brain tumor
d) Right eye trauma
e) Retroorbital cellulitis in the right eye

145. Identify the true statement about omphalocele:
a) Not covered with sac
b) Normal abdominal cavity size
c) Appears from the right side of umbilicus
d) May be associated with trisomy
e) Surgery is not required in a small omphalocele

146. All of the following statements about enuresis are true except:
a) Normal up to 6 years of age
b) If both parents have a history of enuresis, child has a 77% chance of developing enuresis.
c) Pediatrician should inquire about stressful events in all patients with secondary enuresis.
d) Nocturnal enuresis is more common in boys than girls.
e) Urography and cystostomy should not be performed unless an organic lesion is suspected.

147. A 13-year-old boy appears in ER with abnormal movements of extremities, trunk, and facial muscles. His mother stated that he has been taking a medicine prescribed by the physician for the last 2 weeks. The medicine most likely causes these clinical signs:
a) Phenytoin
b) Haloperidol

c) Lorazepam
d) Phenobarbital
e) Diazepam

148. Identify the true statement about SLE (systemic lupus erythematosis):
a) Type I is the most common form of lupus nephritis.
b) Butterfly rash and Raynaud phenomenon are absent.
c) Anti-DNA is more specific and reflects degree of disease activity.
d) Anti-Smith (sm) antibody measures disease activity
e) Positive ANA (antinuclear antibody) is more specific and measures disease activity.

149. A 2-year-old girl appears in clinic for a routine check-up. She does not like to eat at all but she loves potato chips. The best measure to check her nutritional status:
a) Head circumferance
b) Length
c) Weight
d) Weight for height
e) Skin fold thickness

150. VDRL tests were performed on 33 patients to rule out syphilis. 5 patients had positive VDRL test results and they were diagnosed with syphilis (A). 10 patients had negative VDRL test results and they were diagnosed with syphilis (C). 3 patients had positive VDRL test results but they were not diagnosed with syphilis (B). The remaining 15 patients had negative VDRL test results and they were not diagnosed with syphilis (D).
Overall accuracy:
a) 60.6%
b) 33%
c) 83%
d) 65%
e) 94.9%

151. A 18-year-old-girl has PKU (phenylketonuria). She got married and wanted to have a baby. She is asymptomatic. She should begin low phenylalanine diet:
a) After pregnancy test results
b) After the baby is delivered
c) Before conception
d) Just before the delivery
e) During lactation

152. A 7-year-old boy is diagnosed with small intestinal obstruction. The surgeon wants to correct all of the following before surgery except:
a) Dehydration
b) Anemia
c) Acidosis
d) Reduce fever
e) Vomiting

153. The true statement about anorexia nervosa:
a) Occurs in female of lower socioeconomic class only
b) Growth hormone is elevated
c) Sepsis is the most common cause of death
d) Hair grows during overfeeding state
e) Hyperchloremic acidosis is common.

154. A girl appears with white foreclock. The girl should be referred for the following investigation:
a) Renal sonogram
b) EKG
c) Audiometry

d) Head CT scan
e) Opthalmologic examination

155. The true statement about hematuria:
a) Less than 5 RBC per high power field
b) Hematuria means renal disease
c) Hematuria with proteinuria indicate kidney source
d) Does not occur in fever, exercise, and gastroenteritis
e) Does not occur in respiratory infection and viral infection

156. A newborn CBC reveals hemoglobin (11.0), MCV (106), WBC (12,600), platelet (296,000), and reticulocyte (2%). Most likely diagnosis:
a) Anemia of prematurity
b) Iron deficiency anemia
c) G6PD deficiency
d) Normal
e) ‘ABO’ incompatibility and Coombs positive

157. A 7-year-old boy is diagnosed with diabetes mellitus. His mother wants to know the ideal distribution in calories:
a) 33% breakfast, 33% lunch, 34% dinner
b) 25% breakfast, 25% lunch, 50% dinner
c) 20% breakfast, 20% lunch, 60% dinner
d) 10% breakfast, 20% lunch, 25% dinner, 15% each at midmorning, midafternoon, and evening snacks.
e) 20% breakfast, 20% lunch, 30% dinner, 10% each at midmorning, midafternoon, and evening snacks.

158. A group of adolescent went to a cruise ship and develop diarrhea. Other people in the ship were also affected. Most common organism responsible for diarrhea:
a) Rotavirus
b) Shigella
c) Salmonella
d) Norwalk virus
e) S. aureus

159. Breast feeding is contraindicated in all of the following except:
a) Herpetic lesions in mouth
b) Severe psychoses
c) HIV
d) Herpetic lesion in breasts
e) Active tuberculosis

160. Normal caloric contents in each gram of protein, carbohydrate, and fat:
a) 4 Kcal protein, 4 Kcal carbohydrate, 4 Kcal fat
b) 6 Kcal protein, 6 Kcal carbohydrate, 9 Kcal fat
c) 4 Kcal protein, 5 Kcal carbohydrate, 8 Kcal fat
d) 4 Kcal protein, 4 Kcal carbohydrate, 12 Kcal fat
e) 4 Kcal protein, 4 Kcal carbohydrate, 9 Kcal fat

161. A 16-year-old male athlete likes Gatorade liquid drinks. His friends like Poweraid drinks. He wants to know the best fluid therapy during sports:
a) Gatorade
b) Poweraid
c) Beer
d) Pure, plain, cold water
e) Pepsi

162. A 18-year-old girl usually consumes 2,100 calories per day. She becomes pregnant. What is the appropriate caloric requirement per day:
a) 2,100
b) 2,200
c) 2,300
d) 2,400
e) 3,000

163. A 4-year-old boy appears with severe watery diarrhea and recurrent, vague, crampy mid-abdominal pain for the last 2 days. The boy looks healthy. His mother is unsure of any obvious relation with milk ingestion. Physical examination reveals abdominal distension, flatulance, and borborygmi.
Most likely diagnosis:
a) Lactase deficiency
b) Sucrase deficiency
c) Galactase deficiency
d) Sucrase-isomaltase deficiency
e) Glucose-galactose malabsorption

164. A pregnant mother took valproic acid in early first trimester. She was not sure about her pregnancy at that time. She is worried. Most likely complication:
a) VSD
b) Limb defects
c) Spina bifida
d) Hydrops fetalis
e) Hypoplastic nose

165. A 24-week gestational age premature infant (550 grams birth weight) developed BPD (bronchopulmonary dysplasia). She has moderate to severe BPD changes in lungs. At present, the girl is 2 months old and still requiring oxygen by nasal canula. Mother wants to know the usual time of recovery in BPD patients:
a) 1 – 3 months
b) 3 – 6 months
c) 6 – 12 months
d) 12 – 15 months
e) 15 – 24 months

166. A full-term newborn male child developed watery stools after breast feeding. The breast milk was discontinued. He also developed watery stools with Similac and Enfamil. Physical examination reveals bloated abdomen. The infant formulas were stopped. Examination of a stool specimen reveals sugar, acidic pH, and reducing substance. Most likely diagnosis:
a) Glucose-galactose malabsorption
b) Lactase deficiency
c) Sucrase deficiency
d) Sucrase-isomaltase deficiency
e) Isomaltase deficiency

167. A 6-month-old female infant appears with watery diarrhea and failure to gain weight. She is receiving soy formula. The infant does not have recurrent abdominal pain. The stool specimens do not contain reducing substance. Physical examination reveals bloated abdomen. Most likely diagnosis:
a) Lactase deficiency
b) Sucrase-isomaltase deficiency
c) Glucose-galactose malabsorption
d) Glucose malabsorption
e) Galactose malabsorption

168. A 12-year-old boy was brought to the ER after a car accident. Physical examination reveals a distended abdomen and tenderness in the left upper quadrant. The surgeon suspected splenic injury. The preferred method of investigation:
a) X-ray of the abdomen
b) CT scan of the abdomen
c) Right lateral decubitus film
d) Left lateral decubitus film
e) Nuclear scan

169. All of the following statements are true about the management of pain in a burn patient except:
a) Morphine should be discontinued before extubation.
b) Midazolam is used to reduce anxiety.
c) Benzodiazepine should be reduced to about ½ of dose over 24-72 hours before extubation.
d) Rapid weaning from benzodiazepine can cause seizures.
e) Morphine is used as PCA (patient-controlled analgesia) in older patients.

170. A 3.5 kg full-term male newborn was admitted to NICU for tachypnea. The boy was delivered by NSVD with Apgar scores 7 and 8 at 1 and 5 minutes respectively. Physical examination reveals hypotension (BP 38/25), subcutaneous emphysema, tachypnea (respiration 70-80 per minute), and engorged neck veins. The true statement about this clinical condition:
a) Resolves spontaneously
b) Diagnosis is not confirmed by X-ray.
c) Most patients are symptomatic.
d) Chest CT scan is indicated.
e) Echocardiogram can confirm the diagnosis.

171. A 6-year-old girl appears in the ER with rashes over the lower extremities and buttocks for the last 24 hours. She had fever and malaise for the last 3 days. She also stated the right knee and the left ankle pain. Physical examination reveals erythematous maculopapular lesions on skin. The true statement about this clinical condition:
a) Low platelet count
b) Reduced IgA and IgM
c) Biopsy of skin lesions confirms the diagnosis of vasculitis
d) Intussuception is present in all cases.
e) Hematuria and proteinuria are present in all cases.

172. A 16-year-old girl was brought to the ER. She went to a party last night, and today in the morning she could not arise from bed and complained of weakness in both lower extremities as well as no vision in both eyes. Her vital signs are normal. Physical examination reveals a normal neurological examination, normal pupillary reflex to light. CBC = normal; CSF = normal.
Most likely diagnosis:
a) Botulism
b) Guillain-Barre syndrome
c) Meningitis
d) Brain tumor
e) Conversion disorder

173. A 2-year-old boy ingested some unknown medication. He vomited once. His mother should:
a) Call his pediatrician before giving ipecac.
b) Call poison control center.
c) Call pharmacist because he is a nice and smart guy.
d) Call her husband because he managed a similar case for his nephew.
e) Call hospital social worker because she told her to call if any problem.

174. A 9-year-old girl was brought to the ER with history of fever 106.4°F (41.5°C) for the last 12 hours. The least likely cause of fever in this patient:

a) Infection
b) Malignant hyperthermia
c) Malignant neuroleptic syndrome
d) Drug fever
e) Heat stroke

175. A child developed hypothermia (temperature 95°F or 35°C) for the last 6 hours. Hypothermia could be due all of the following except:
a) Hypothyroidism
b) Overuse of antipyretics
c) Cold exposure
d) Overwhelming sepsis
e) Hypothalamic disorder

176. A 4-year-old girl was brought to the ER with history of diarrhea for the last 5 days. She had 8 to 9 watery stools per day. She has been drinking home-made liquid. She has no fever. Mother denies history of vomiting. Physical examination reveals irritability, doughy skin, but absence of obvious clinical signs of dehydration, The child weighs 16 kg. SMA6: Na = 160, K= 3.6, BUN = 32. The next appropriate intravenous fluid therapy should be:
a) $D_5$ water plus Nacl and $NaHCO_3$ total (25 mEq/L) 20 mL/Kg over 1 hour in emergency phase.
b) $D_5$ water should be given over 48 hours; total 200 mL/Kg, no sodium should be added to the fluid.
c) $D_{10}$ water plus Nacl (40 mEq/L) should be given over 24 hours, total 100 mL/Kg.
d) $D_5$ water plus Nacl and $NaHCO_3$ (25 mEq/L) should be given over 48 hours; calculate 10% dehydration.
e) $D_5$ water plus $NaHCO_3$ should be given over 48 hours; calculate 5% dehydration.

177. A 1-month-old girl was brought to a clinic with history of diarrhea (6 to 7 stools per day) for the last 3 days. She is drinking breast milk. The girl vomited once 2 days ago. Physical examination reveals alertness, restlessness, normal capillary refill time (less than 2 seconds), and normal heart rate. The interpretation is that girl is very mildly dehydrated due to weight loss. The next appropriate management should be:
a) Discontinue breast breasting and start infant formula feeding.
b) Continue breast feeding plus infant formula feeding.
c) Oral rehydrating solution for 1 to 2 hours, before resuming breast-feeding.
d) NPO plus intravenous hydration.
e) Discontinue breast feeding and start formula feeding plus intravenous hydration.

178. A full-term SGA (small for gestational age) male newborn was admitted to NICU. Maternal history was unremarkable. Physical examination reveals height, weight, and head circumferance less than 5th percentile for his gestational age. CBC reveals thrombocytopenia (platelet count 60,000). Head CT scan reveals periventricular calcifications. The most definitive diagnostic study for congenital CMV infections:
a) IgM – CMV
b) IgG – CMV
c) IgA – CMV
d) Blood culture for CMV
e) Urine culture for CMV

179. The pulse rate normally increases with fever. The pulse rate remains low in the presence of fever in all of the following conditions except:
a) Typhoid fever
b) Malaria
c) Brucellosis
d) Leptospirosis
e) Drug fever

180. All of the following statements are true about pertussis except:
a) Both disease and immunization against pertussis provides complete and lifelong immunity against disease or reinfection.

b) Erythromycin for 14 days is drug of choice.
c) Erythromycin can cause hypertrophic pyloric stenosis.
d) A severely ill infant may appear completely normal between episodes.
e) Prophylactic antibiotic is not recommended for exposed health care workers.

181. The resident physician performed a routine physical examination of a full-term infant. The examination reveals bifid uvula. The rest of the physical examination was unremarkable. Attending physician told the resident physician to look for an associated anomaly:
a) Cardiac
b) Renal
c) Ear
d) Eye
e) Submucous cleft

182. A 13-year-old girl came for routine physical examination. Her breasts and areolae are enlarged, but areolae and nipples did not form secondary mound. Her pubic hair is dark, slightly coarse, beginning to curl, located on mons pubis. Her development should correspond with Tanner stage (sex maturity rating):
a) 1
b) 4
c) 2
d) 3
e) 5

183. A 15-year-old girl came for routine physical examination. Her breast and areolae are enlarged, and areolae and nipples form secondary mound but nipples do not project. Her pubic hair is coarse, curly, abundant, but absence in medial side of the thigh. Her development should correspond with Tanner stage:
a) 1
b) 4
c) 2
d) 3
e) 5

184. A 17-year-old girl came for routine physical examination. Her breasts are mature, nipples do project, and areolae are part of general breast contour. Her pubic hair spread to medial side of the thigh and forms feminine triangle. Her development should correspond to Tanner stage:
a) 1
b) 4
c) 2
d) 3
e) 5

185. A 11-year-old girl came for routine physical examination. Her breasts and papillae form a small mound; areolae are increased in diameter. Her pubic hair is sparse, uncurly, lightly pigmented, and located in medial border of labia. Her development should correspond with Tanner stage:
a) 1
b) 4
c) 2
d) 3
e) 5

186. A 10-year-old girl appears in the clinic with history of cough and purulent nasal discharge for the last 3 weeks. She used over the counter cough medicine but the symptoms persist. She has been coughing in school as well as at night. Physical examination reveals normal temperature, bilateral erythematous nares with yellowish nasal discharge. She denies tenderness over the sinuse areas. Most likely diagnosis:
a) Sinusitis
b) Tonsillopharyngitis

c) Allergic rhinitis
d) Foreign body
e) URI

187. A 1-month-old male appears with bilateral enlargement of breasts. His birth history was unremarkable. Physical examination is normal except enlarged breasts. The appropriate next step should be:
a) Estrogen level
b) Leave the baby alone, only reassurance
c) Progesterone level
d) Abdominal sonogram
e) Chromosome study

188. A full-term baby was born by forcep delivery with Apgar scores 5 and 7 at 1 and 5 minutes respectively. Physical examination reveals absence of left retinal reflex. Most likely diagnosis:
a) Retinal hemorrhage
b) Retinal detachment
c) Cataract
d) Bleeding inside anterior chamber of left eye
e) Corneal trauma

189. A 16-year-old obese boy wants to reduce his weight. All of the following methods he tried. The most difficult way to comply:
a) Use dietary pills for 1 month
b) Starvation for a few days
c) Exercise for 2 months
d) Exercise and diet for 3 months
e) Reduce caloric intake for at least 6 months to 1 year

190. A 3-day-old newborn infant was diagnosed with congenital cyanotic heart disease. Cardiac surgery was performed. The cardiac output was decreased after surgery. The clinical manifestations suggestive of decreased cardiac output:
a) Tachycardia
b) Bradycardia
c) Hypertension
d) Hypotension and prolonged capillary refilling time.
e) Hypotension and normal capillary refilling time.

191. A non-clinic pregnant woman's VDRL titer was 1:16. The VDRL test was performed after the baby was delivered. The mother was not aware of any treatment for her syphilis. The baby's VDRL titer was 1:32, FTA – ABS IgM was negative, and FTA – ABS IgG was positive. The mother's FTA – ABS IgG was positive. The next appropriate step in management:
a) Infant should be treated immediately without further investigation.
b) Infant does not need any therapy and no further investigation is indicated.
c) CSF VDRL and long bone X-ray should be done to rule out syphilis.
d) Mother should be treated but the infant does not need therapy.
e) Infant should be watched for clinical signs of syphilis.

192. Which of the following is most common in general population?
a) Cystic fibrosis
b) Spina bifida
c) Cerebral palsy
d) Epilepsy
e) Mental retardation

193. A 5-year-old girl went to a clinic for routine check up. CBC test results reveal hemoglobin (12.0), hematocrit (36.0), MCV (55), and reticulocyte count (2%). Most likely diagnosis:

a) Iron deficiency anemia
b) Folic acid deficiency
c) Thalassemia major
d) Thalassemia minor
e) Normal

194. A 6-year-old girl appears with malodorous vaginal discharge for the last 7 days. Physical examination reveals yellowish vaginal discharge but there is no evidence of trauma. Most likely diagnosis:
a) Vaginal foreign body
b) Candida infection
c) Trichomonas infection
d) Chlamydial infection
e) S. aureus infection

195. The onset of routine screening for hypertension should be:
a) 6 months
b) 12 months
c) 3 years
d) 6 years
e) 12 years

196. A 6-year-old boy came to a clinic for routine check-up. Physical examination reveals that the right leg is bigger than left leg. The next step in investigation:
a) X-ray both legs
b) Bone scan
c) Hip ultrasonography
d) Doppler study of femoral artery
e) Abdominal ultrasonography

197. A 1-month-old severe preterm infant developed two apneic episodes. Physical examination reveals heart rate more than 165 per minute, respiratory rate 30 per minute, temperature 98.6°F (37°C), and paleness. CBC test results reveal hematocrit 20. The infant is receiving vancomycin and cefotaxime to rule out sepsis. The next step in management:
a) P-RBC transfusion
b) IV hydration
c) Aminophylline
d) Atropine
e) Whole blood transfusion

198. A 10-year-old girl appeared in the ER with acute asthma attacks. The girl improved with inhalation bronchodilator therapy. She usually receive oral prednisone at home. The next step in management:
a) Increase oral prednisone doses
b) Start inhaled steroid and discontinue oral steroid
c) Resume theophylline along with oral steroid
d) Reduce oral prednisone doses
e) Give both inhaled and oral steroids

199. Complication of nasojejunal feeding:
a) Bilious vomiting
b) Diarrhea
c) Peritonitis
d) Perforation
e) Necrotizing enterocolitis

200. A 17-year-old boy appears with testicular tumor. Most likely diagnosis:
a) Fibroma

b) Dermoid
c) Lipoma
d) Metastatic mass
e) Germ cell tumor

201. The medication may cause sensorineural hearing loss in children:
a) Penicillin
b) Phenytoin
c) Gentamicin
d) Ampicillin
e) Phenobarbital

202. The cranial nerves responsible for sucking:
a) 3, 5, 7 th
b) 3, 9, 12 th
c) 5, 7, 9 th
d) 5, 7, 12 th
e) 9, 10, 12 th

203. Most common cause of headache in children:
a) Stress
b) Myopia
c) Sinusitis
d) Migraine
e) Increased intracranial pressure

204. The cranial nerves responsible for swallowing:
a) 9, 10, 11 th
b) 9, 10, 12 th
c) 10, 11, 12 th
d) 8, 9, 10 th
e) 5, 7, 12 th

205. Most common time for scoliosis to occur in adolescent female:
a) 10 years
b) 11 years
c) 12 years
d) 13 years
e) 15 years

206. Most common time for scoliosis to occur in adolescent male:
a) 12 years
b) 13 years
c) 14 years
d) 15 years
e) 16 years

207. A mother of a female infant switched her infant’s formula from a Similac iron-fortified formula to a Similac low iron formula due to her daughter’s history of constipation. She passed stool every other day. The next appropriate step should be:
a) Add oral iron supplement
b) Give glycerine suppository
c) Give soy-based formula
d) Give high caloric formula
e) Resume Similac iron-fortified formula

208. Treatment for Duchenne muscular dystrophy includes all of the following except:
   a) Fluorinated steroid is indicated.
   b) Digoxin is used in cardiac failure.
   c) Calcium and fluoride are given
   d) Physiotherapy is useful but cannot prevent contracture.
   e) Antibiotics are used in pulmonary infections.

209. A full-term newborn was admitted to NICU with mild respiratory distress. Amniotic fluid was meconium stained. Apgar scores were 7 and 8 at 1 and 5 minutes respectively. The newborn was placed under 40% oxyhood. ABG reveals pH 7.34, $Pco_2$ 39, $Po_2$ 80, base deficit –3.4. Chest X-ray reveals hyperinflation and fluid in the fissure. Most likely diagnosis:
   a) Meconium aspiration
   b) Normal lungs
   c) Pleural effusion
   d) Chylothorax
   e) TTNB (transient tachypnea of the newborn)

210. In a normal condition, water requirement in a 3-day-old newborn (mL/kg/day):
   a) 40 – 60
   b) 60 – 80
   c) 80 – 100
   d) 100 – 120
   e) 120 – 150

211. A severely premature (26 weeks gestational age) newborn developed TPN (total parenteral nutrition) induced cholestasis.
   TPN-induced cholestasis is most likely due to:
   a) Multifactorial
   b) Vitamin B
   c) Vitamin D
   d) Vitamin K
   e) Amino acids

212. A 12-year-old girl appears with fever 103.3°F (39.6°C), headache, purulent nasal discharge, and eye swelling for the last 4 to 5 days. Physical examination reveals bilateral yellowish nasal discharge, more in the left than right, and left eye swelling. Most likely diagnosis:
   a) Allergic rhinitis
   b) Foreign body
   c) Nasal polyp
   d) Orbital cellulitis
   e) Sinusitis

213. A 1-month-old full-term infant is receiving breast milk only. The infant should receive supplementation of:
   a) Iron
   b) Vitamin D
   c) Protein
   d) Vitamin $B_{12}$
   e) Vitamin E

214. A full-term baby was born with ambiguous genitalia. Maternal amniocentesis reveals 46, XX. Physical examination reveals a phallus measuring 2.0 cm, urethral opening just below the phallus, and gonads are not palpable. $SMA_6$ = normal; elevated 17-hydroxy progesterone level. Most likely diagnosis:
   a) Normal female
   b) Adrenal tumor
   c) Turner syndrome variant
   d) Mixed gonadal dysgenesis

e) 21-hydroxylase deficiency

215. A child had been suffering from asthma for the last 2 years. The condition worsens since his parents purchased a dog and a cat. Most likely cause for worsening asthma:
a) Only dog can produce asthma
b) Only cat can produce asthma
c) None of them produce asthma
d) Both of them produce asthma
e) Properly washed animals and their company is good for asthma patient.

216. A 3-year-old girl was brought to the ER with history of excessive drooling for the last 2 hours. Mother denies history of fever and URI symptoms. The child was drinking well and was playful prior to this episode. Physical examination reveals normal tonsils and pharynx. Chest X-ray reveals a radioopaque foreign body in the esophagus. The next step in management:
a) Reassure the family, everything will be fine without intervention
b) Give some solid food which will dislodge the foreign body from esophagus to the stomach.
c) Endoscopic removal is indicated.
d) Give ipecac to induce vomiting
e) Give muscle relaxant which will relax esophageal musculature.

217. A 2-year-old girl is mentally retarded. Initial clinical sign of mental retardation:
a) Breaking home appliances
b) Excessive drooling
c) Delayed speech
d) Delayed walking
e) Sleeping most of the time

218. The true statement about Prader-Willi syndrome:
a) Hyperglycemia is not due peripheral resistance to insulin
b) Chromosome deletion is located in the long arm of chromosome 15
c) The deleted chromosome is maternally derived.
d) Hypertonia is noted at birth.
e) Hergonadism is a clinical finding.

219. If one student develops streptococcal pharyngitis in a class, the recommendation for other students should be:
a) The student who sits next to the student who got infected should receive penicillin therapy.
b) The throat culture should be obtained from students who developed symptoms and signs of streptococcal pharyngitis.
c) The class should be closed for a few days.
d) Everybody should receive penicillin because the final examination is due next week.
e) Teacher should be treated along with students.

220. A 5-year-old girl appears in a clinic with history of involuntary voiding in bed at night for the last 3 days. Her mother is very upset. She had similar problems 1 year ago. She likes her school. She is a happy girl. The next step in management:
a) Tell her that she will sleep in the sofa if she urinates in the bed.
b) Tell her that she will get a toy if she does not void in the bed.
c) Start a small dose of DDAVP or imipramine therapy
d) Psychiatric consult
e) Urinalysis

221. A child is diagnosed with allergic rhinitis. He is allergic to pollen and dust mites. The child may develop in future:
a) Anaphylactic reaction to immunization
b) Allergy to medication
c) Asthma

d) Otitis media
e) Nasolacrimal duct obstruction

222. A 12-year-old boy was diagnosed with sarcoidosis. The definitive diagnostic test:
a) Sputum culture
b) Liver function test
c) Pulmonary function test
d) Opthalmologic examination
e) Tissue biopsy

223. A newborn boy appears with anemia and jaundice. Physical examination reveals severe jaundice and absence of splenomegaly. The serum bilirubin level is 18 mg/dL. CBC reveals hemoglobin 8 g/dL, hematocrit 24 g/dL, WBC 12,000, platelet 300,000, and reticulocyte 16%. Peripheral smear reveals spherocytes. Maternal past history reveals splenectomy. Most likely diagnosis:
a) ‘ABO’ hemolytic anemia
b) Hereditary elliptocytosis
c) Hereditary spherocytosis
d) G6PD deficiency
e) Rh-incompatibility

224. Most common organism in cat bite wound:
a) S. aureus
b) S. epidermidis
c) Pseudomonas
d) Pasteurella multocida
e) Listeria

225. The absorption of triglyceride in intestine:
a) MCT (medium chain triglyceride) is better absorbed than LCT (long chain triglyceride) in small intestine.
b) LCT is better absorbed than MCT.
c) MCT and LCT are equally absorbed.
d) LCT is better absorbed in large intestine.
e) MCT is better absorbed in large intestine.

226. A normal 5-year-old child can do:
a) Can copy a triangle
b) Can copy a diamond
c) Name 7 colors
d) Count 20 pennies correctly
e) Repeat sentence of 20 syllables

227. A 11-year-old boy came for a routine physical examination. The examination reveals enlarged, pink scrotum; slightly enlarged penis; pubic hair is scanty, long, slightly pigmented. Most likely sex maturity rating (SMR) or Tanner stage:
a) 1
b) 2
c) 3
d) 4
e) 5

228. A 14-year-old boy came for a routine physical examination. He is short in stature. The examination reveals large testes, longer penis, and pubic hair is darker, started to curl, small in amount. Most likely Tanner stage:
a) 1
b) 2
c) 3
d) 4

e) 5

229. A 16-year-old boy came for a routine physical examination. He is slim. The examination reveals larger, darker scrotum; length and breadth of penis are enlarged; coarse and curly pubic hair; pubic hair is less than that of an adult. Most likely Tanner stage:
a) 1
b) 2
c) 3
d) 4
e) 5

230. A 17-year-old boy appears like a 14-year-old. Physical examination reveals large testes, large penis, and pubic hair is large quantity and spread to the medial side of the thigh. Most likely Tanner stage:
a) 1
b) 2
c) 3
d) 4
e) 5

231. A 6-year-old boy was brought to the ER with history vomiting and diarrhea for the last 6 days. He vomited 3 to 4 times per day and he passed watery stools 7 to 8 times per day. He has no fever. Mother stated that he did not eat outside food. Despite vomiting he had been drinking sips of water, soda, and other liquids. He preferred water. Physical examination reveals capillary refill 2 seconds, normal BP 88/48, tachycardia (heart rate 120 per minute), sunken eyes, no tears, and dry mucous membranes. The boy weighs 20 kg.
SMA6: Na = 120, Cl = 80, K = 4.0, BuN = 25, base deficit –12.0
The next appropriate fluid therapy should be:
a) $D_5$ water plus Nacl correction (200 mEq of Nacl) plus maintenance Nacl (80 mEq) should be given over 6 hours.
b) 3% Nacl solution should be given over 2 hours.
c) 1.5% Nacl solution should be given over 24 hours.
d) 0.9% Nacl solution (100 mEq) over 12 hours.
e) $D_5$ water plus Nacl correction (180 mEq) plus Nacl maintenance (80 mEq/day) should be given over 24 hours; add K acetate after urine output.

232. A full-term newborn is admitted to NICU from a regular nursery for poor feeding and mild tachypnea. Physical examination reveals temperature 96.8°F, respiratory rate 66/minute, BP 55/35; equal air entry in both sides of lungs; no murmur; no hepatosplenomegaly; salmon-colored rash over the trunk. CBC reveals WBC count 35,600/Cu mm, 80% polymorphs, 8% bands, 8% monocytes, 4% lymphocytes, hemoglobin 13, hematocrit 39, platelet 165,000. CSF reveals WBC count 176/Cu mm, 80% polymorphs, 20% lymphocytes, protein 250 mg/dL, glucose 22 mg/dL.
CSF Gram stain: Gram positive rod like diptheroid.
Chest x-ray: rule out left lung infiltrate.
CSF culture: pending results.
Most likely diagnosis:
a) Listeria monocytogenes
b) Group B Streptococcus
c) S. aureus
d) E. coli
e) Group A Streptococcus

233. A 12-year-old boy appears less than 5 th percentile in height but 25 th percentile in weight. His father is 5 feet tall and his mother is 4 feet 7 inches tall. Most likely cause of short stature:
a) Hypopituitarism
b) Hypothyroidism
c) Hypoadrenalism
d) Familial short stature

e) Growth hormone deficiency

234. A 16-year-old boy was brought to the ER with history head injury due to a car accident. He opened his eyes to voice, confused, and was able to localized his pain. Glassgow coma scale was 12. He vomited once in the ER. The next appropriate step in management:
a) Skull X-ray
b) Head CT scan
c) Spinal tap
d) No investigation is indicated
e) Intubate the boy immediately

235. A 15-year-old girl appears in a clinic with history of low-grade fever, cough, and night sweats for the last 1 month. Mother denies any history of tuberculosis. Physical examination reveals normal lung sounds bilateral. Chest X-ray reveals hilar lymph nodes enlargement with calcification. The next step in management:
a) Lung scan
b) Lung CT scan
c) A tuberculin skin test
d) Throat culture
e) Sinus X-ray

236. A 9-year-old child appears in a clinic with history of muscle pain. Physical examination reveals muscle and bone tenderness; bowed legs. Serum calcium 6.5 mg/dL, phosphorus 10.0 mg/dL, alkaline phosphatase 1020 U/L, parathyroid hormone (PTH) 250 pg/mL. Bone X-ray reveals widening of metaphysis and subperiosteal resorption. Most likely diagnosis:
a) Renal osteodystrophy
b) Primary hyperparathyroidism
c) DiGeogre syndrome
d) Vitamin D-dependent rickets
e) Nutritional rickets

237. A 5-year-old girl appears in the ER with fever and mild respiratory distress for the last 6 hours. She has sickle cell disease. She received all prophylactic vaccinations (e.g., pneumococcal, influenza) plus continuing penicillin prophylaxis. Chest X-ray reveals right middle lobe and lower lobe infiltrates. The girl is receiving oxygen by mask. Most likely organism causing pneumonia:
a) S. aureus
b) Pseudomonas
c) E. coli
d) RSV
e) Streptococcal pneumoniae

238. A 5-year-old boy came for routine check-up. He is up to date in his immunization except varicella vaccine. He was not infected with chicken pox. The following statement is true:
a) He does not need vaccination because he has protective antibody from a subclinical infection.
b) The complications of vaccination are fatal.
c) The vaccination is not effective at this age.
d) The vaccination is recommended.
e) Chicken pox is a mild disease, there is no need to give vaccine.

239. The true statement about the patient with a mild mental retardation:
a) Common in postmature babies
b) CNS abnormality is commonly found.
c) Aggressive behavior is common.
d) Do not have any friends.
e) Usually diagnosed at school entry age.

240. UTI prophylaxis is indicated in all of the following except:

a) Vesicoureteral reflux
b) Urinary tract stasis and obstruction
c) Neurogenic bladder
d) Phimosis
e) Calculi

241. Most common organism of acute bronchiolitis:
a) Influenza virus
b) RSV
c) Parainfluenza virus
d) Rhinovirus
e) Coxsackievirus

242. All of the following medications decrease theophylline clearance and increase theophylline toxicity except:
a) Phenobarbital
b) Propranolol
c) Oral contraceptives
d) Erythromycin
e) Cimetidine

243. Home water heater temperature should not exceed:
a) 100°F
b) 125°F
c) 135°F
d) 145°F
e) 150°F

244. Most characteristic feature of neurofibromatosis (NF – 2):
a) Bilateral acoustic neuromas
b) Multicystic kidney
c) Mental retardation
d) Generalized seizures
e) Polycystic kidney

245. A 4-month-old girl appears in the ER with history fever and respiratory distress for the last 24 hours. Her mother died recently. Physical examination reveals temperature 102°F, respiratory rate 60 – 70 per minute, blood pressure 65/35, equal air entry in both lungs with scattered rales. Chest X-ray reveals bilateral interstitial infiltrates. Most likely organism:
a) Group B Streptococcus
b) RSV
c) S. aureus
d) Pneumocystis carinii
e) Streptococcus pneumoniae

246. A child is diagnosed with Wilson disease. He has two siblings. Both siblings are healthy. The appropriate management for siblings:
a) Reassurance only
b) Refer to an opthalmologist
c) Refer to a neurologist
d) Penicillamine therapy
e) Refer to a nephrologist

247. A 3-day-old male appears with history of poor feeding and vomiting. Physical examination reveals lethargy, jaundice, a full anterior fontanelle, and hepatomegaly. Sepsis work up was performed. Blood culture and CSF culture reveal Gram-negative rods. Urine is positive for reducing substances. Most likely diagnosis:
a) Group B Streptococcus meningitis

b) S. aureus bacteremia
c) G6PD deficiency with meningitis
d) ‘ABO’ hemolytic disease with meningitis
e) Galactosemia

248. A 3-month-old female infant appears in the ER with history of diarrhea for the last 2 to 3 weeks and rashes in the diaper and oral area for the last 10 days. Mother denies any fever and URI symptoms. Past medical history reveals otitis media and pneumonia. Physical examination reveals failure to thrive (FTT), oral and perineal candidal infections. Most likely diagnosis:
a) Severe combined immunodeficiency (SCID)
b) Chronic granulomatous disease
c) Milk intolerance causing diarrhea
d) Marasmus
e) Kwashiorkor

249. A 12-year-old boy appears with history of fever (102°F) and pain in lower end of the left thigh for the last 5 days. He had history of trauma 2 weeks ago in the left ankle. Physical examination reveals swelling, tenderness, and redness in the distal thigh, but a full range of motion in the left knee and left hip. CBC reveals WBC count 21,500/Cu mm with polymorphs 85% and lymphocytes 15%. X-ray reveals normal left femur and left knee. The next step in investigation:
a) MRI of the left femur
b) CT scan of the left hip
c) Radionuclide bone scan of left femur
d) Ultrasonography of left knee
e) X-ray of the lower back

250. A 3-year-old girl appears with history of severe diarrhea for the last 5 days. She had been drinking home made liquid formula because her parents could not afford Pedialyte liquid. Physical examination reveals tachycardia, absence of fever, and signs of dehydration. The child received 20 mL/kg 0.9% Nacl bolus intravenously before the SMA6 results are available. The child developed convulsion. SMA6 results reveal Na = 165 mq/L, Cl = 140 mEq/L, BUN = 30, glucose = 60 mg/dL. Most likely cause of convulsion:
a) Cerebral hemorrhage
b) Cerebral edema
c) Hypoglycemia
d) Hyponatremia
e) Dehydration

251. The caloric requirement recommended for a 3-month-old boy (Kcal/kg/day):
a) 85
b) 90
c) 100
d) 105
e) 110

252. Ratio of whey to casein in cow milk:
a) 82 : 18
b) 40 : 60
c) 60 : 40
d) 25 : 75
e) 18 : 82

253. A 14-year-old girl was diagnosed with scoliosis. She refused treatment. All of the following complications may occur if the patient is not treated for scoliosis except:
a) Spinal cord compression
b) Impingement on nerves
c) Cor pulmonale

d) Reduced pulmonary function
e) Degenerative arthritis

254. First antibody appears in body:
a) IgG
b) IgM
c) IgA
d) IgD
e) IgE

255. All of the following conditions result in an increased anion gap except:
a) Lithium ingestion
b) Methanol ingestion
c) Renal failure
d) Diabetic ketoacidosis
e) Salicylate poisoning

256. A child is diagnosed with HIV. The most common cause of adrenal hypofunction in this patient:
a) Pneumocystis carinii
b) Toxoplasmosis
c) CMV
d) Mycobacterium avium
e) Cryptococcus species

257. A child with history of near-drowning was brought to the ER. The nurse wants to take the temperature. The best way to measure the core temperature:
a) Rectal
b) Oral
c) Axillary
d) Skin
e) Tympanic membrane

258. All of the following are the clinical manifestations of hyperparathyroidism except:
a) Hypercalcemia
b) Constipation
c) Fever
d) Increased height
e) Polyuria

259. A 3-year-old boy wants to go to school. The most important finding that indicate that the boy is ready to go to school:
a) Very friendly to other children
b) Follow all commands
c) Toilet trained
d) Does not like to watch TV
e) Expressive language development

260. A 14-year-old boy is admitted to the PICU (Pediatric intensive care unit) with DKA (diabetic Ketoacidosis). He takes both regular and NPH insulin twice daily. He was admitted with DKA 3 weeks ago. The most likely cause for DKA in this patient:
a) Eats excessive candy
b) Frequently suffers from an infection
c) Drinks less fluid
d) Takes increased dose of insulin
e) Forgets to take insulin

261. A 7-day-old newborn infant appears with history of constipation, poor sucking and swallowing for the last 4 days. Physical examination reveals drooling, hypotonia, and ptosis. Sepsis work up was performed. CSF examination results was normal. The infant was intubated. Repeat physical examination reveals bilateral dilated pupils. Most likely diagnosis:
    a) Brain tumor
    b) Infantile botulism
    c) Encephalitis
    d) Gram-negative bacteremia
    e) Gram-positive bacteremia

262. A full-term female infant at birth appears with bilateral enlargement of breasts. The infant is otherwise healthy. The next step in the management:
    a) Perform serum estrogen level
    b) Sonogram of the ovary
    c) Sonogram of the breasts
    d) Head CT scan
    e) Reassurance only

263. The most important diagnostic evaluation in a severe asthmatic patient:
    a) Chest X-ray
    b) Pulmonary CT scan
    c) Arterial blood gas (ABG)
    d) Pulmonary function test
    e) Radionuclide pulmonary scan

264. A 10-year-old boy was brought to the ER with history of trauma (fell from a bicycle) to the chest. Physical examination reveals swelling, tenderness, and bruises over the left side of the chest. The boy has pain but no respiratory distress. Chest X-ray reveals recent fracture of three ribs. The next step in management:
    a) Reassurance only
    b) Prepare for a surgical repair
    c) Give pain medication
    d) Intubate the child
    e) Call social worker for suspected child abuse

265. All of the following statements are true about Marfan syndrome except:
    a) Defective gene at chromosome 15
    b) Hypotonia
    c) Aortic insufficiency is common
    d) Mitral valve prolapse is common
    e) Anterior dislocation of the lens

266. A 16-year-old boy was brought to the ER with history of vomiting and abdominal pain due to an acute alcohol ingestion. Physical examination reveals diminished respiration, unresponsiveness, and alcoholic breadth. The boy was intubated. All of the following statements are true except:
    a) Dialysis is indicated if blood alcohol level is more than 400 mg/dL.
    b) The death in alcohol overdose syndrome is due to respiratory depression.
    c) Less likely to case gastritis
    d) Stool may be positive for guiac test.
    e) Blood alcohol level above 500 mg/dL has fatal outcome

267. A 3-year-old boy was admitted to pediatric cardiac ICU after surgical repair of a coarctation of aorta. After the surgery, physical examination reveals grade 2/6 systolic ejection murmur in the upper right sternal border. Most likely cause of this murmur:
    a) Congenital bicuspid aortic valve
    b) Persistent coarctation of aorta
    c) Functional murmur
    d) Anemia causing murmur

- e) Atrial septal defect

268. The most common organism responsible for community-acquired bacterial pneumonia:
    - a) S. aureus
    - b) S. epidermidis
    - c) Pseudomonas
    - d) Listeria
    - e) Streptococcus pneumoniae

269. The first sign of liver damage:
    - a) Increased SGOT
    - b) Increased SGPT
    - c) Increased alkaline phosphatase
    - d) Increased PT (prothrombin time)
    - e) Increased PTT (partial thromboplastin time)

270. A 3-year-old girl was brought to the ER with history of ingestion of a few unknown tablets. The girl vomited once on the way to hospital. Physical examination reveals mild abdominal tenderness but the abdomen is soft. Abdominal X-ray reveals multiple radioopaque tablets. Most likely ingested material:
    - a) Calcium tablets
    - b) Iron tablets
    - c) Multivitamins
    - d) Vitamin C
    - e) Vitamin $B_{12}$

271. A full-term newborn was admitted to regular nursery. Physical examination revealed broad thumbs and broad big toes. The rest of the examination was unremarkable. The most likely diagnosis:
    - a) Marfan syndrome
    - b) Noonan syndrome
    - c) Rubinstein – Taybi syndrome
    - d) Turner syndrome
    - e) Down syndrome

272. The side effects of imipramine include all of the following except:
    - a) Dry mouth
    - b) Anxiety
    - c) Insomnia
    - d) Salivation
    - e) May alter sleep pattern

273. A group of children who went to park to play came down with influenza-like symptoms like dry cough, fever, chest pain, headache and body ache. Physical examination reveals hepatosplenomegaly, lymphadenopathy, and bilateral rales over the chest. Most patients have normal chest X-ray, few patients have bronchopneumonia, and hilar lymphadenopathy. Most likely diagnosis:
    - a) Influenza
    - b) Cryptococcosis
    - c) Histoplasmosis
    - d) Sarcoidosis
    - e) Allergic bronchopulmonary aspergillosis

274. A full-term infant is admitted to regular nursery. Physical examination reveals a single blister on the radial aspect of forearm. Infant is feeding well. The next appropriate step in management:
   a) Acyclovir therapy
   b) Reassurance only
   c) Isolate the patient
   d) Give VZIG
   e) Spinal tap

275. A full-term boy with Down syndrome appears with bilious vomiting. Physical examination reveals non-tender, soft abdomen. Abdominal X-ray reveals double-bubble sign.
   Most likely diagnosis:
   a) Pyloric stenosis
   b) Jejunal atresia
   c) Hirschsprung disease
   d) Duodenal atresia
   e) Gastroesophageal reflux

276. All of the following signs are true about Turner syndrome except:
   a) Short stature
   b) Infertility
   c) Abnormal ovaries
   d) Bicuspid aortic valve
   e) Mental retardation

277. The serotypes of group A beta-hemolytic Streptococcus cause acute rheumatic fever include all of the following M types except:
   a) 1
   b) 3
   c) 4
   d) 5
   e) 18

278. A 17-year-old girl appears with repeated episodes of visual disturbances (e.g., bright spots in the visual field) for the last 6 weeks. Each episode is followed by a frontal headache, speech difficulty, and a transient paralysis of left lower extremity. Most likely diagnosis:
   a) Migraine
   b) Glaucoma
   c) Brain tumor
   d) Cataract
   e) Arterio-venous malformation

279. Most common clinical presentation in tuberous sclerosis:
   a) Shagreen patch
   b) Seizure
   c) Rhabdomyoma
   d) Ash leaf
   e) Mental retardation

280. Most common type of burn:
   a) Flame
   b) Electrical
   c) Scald
   d) Chemical
   e) Both flame and chemical combined

281. Vitamin K dependent factors are the following except:

a) II
b) VII
c) IX
d) X
e) XI

282. A child was exposed to ionizing radiation. Most common thyroid complication:
a) Hypothyroidism
b) Hyperthyroidism
c) Thyroid hypoplasia
d) Thyroid aplasia
e) Solitary thyroid nodule.

283. A mother of a newborn child is tested positive for PPD and has negative chest X-ray. The next step in management of this child:
a) Chest X-ray
b) Don't do anything to child
c) Start INH
d) Isolate the baby
e) PPD test

284. A child appears with seizure and hemiparesis. Physical examination reveals port wine nevus in trigeminal area opposite to the side of hemiparesis, buphthalmos, and glaucoma. Most likely diagnosis:
a) Kasabach – Merritt syndrome
b) EEC syndrome
c) Sturge – Weber syndrome
d) Klippel – Trenauany – Weber syndrome
e) LEOPARD syndrome

285. A child was brought to the ER with hypothermia (temperature 95°F) and diminished respiratory effort. Physical examination reveals hypothermia, hypotension, and respiratory depression. The child did not respond to naloxone. Most likely poisoning due to:
a) Morphine
b) Cocaine
c) Mushroom
d) Alcohol
e) Barbiturate

286. The least likely complication of an undescended testis:
a) Torsion
b) Malignancy
c) Infertility
d) Psychologic trauma
e) Benign tumor

287. A pregnant mother is a carrier of hemophilia. She is expecting a boy. What is the chance of a male fetus having disease?
a) 0%
b) 25%
c) 50%
d) 75%
e) 100%

288. Physical activities should be limited in the following cardiac disease:
a) VSD
b) ASD

c) PDA
d) Aortic valve stenosis
e) Pulmonary artery stenosis

289. A male child is diagnosed with ADHD (attention deficit hyperactivity syndrome). His father has tics. The physician should try to avoid the following medication:
a) Clonidine
b) Imipramine
c) Methylphenidate
d) Guanfacine hydrochloride
e) Desipramine

290. A 20-week-old female fetus was aborted. Physical examination reveals cystic hygroma. Most likely diagnosis:
a) Turner syndrome
b) Down syndrome
c) Noonan syndrome
d) Trisomy 18
e) Trisomy 16

291. The time of eruption of the first teeth in an infant (month):
a) 3 – 4
b) 4 – 5
c) 5 – 7
d) 7 – 8
e) 8 – 9

292. A 8-day-old female newborn appears with discharges from both eyes. Physical examination reveals bilateral swelling of the eyelids. The definitive diagnostic test:
a) Gram stain
b) Blood culture
c) Bacterial culture
d) Viral culture
e) PCR study or culture of the conjunctival specimen

293. A total of 100 newborns were exposed to maternal smoking; 60 newborns (A) were born SGA (small for gestational age) and 40 newborns (B) were born normal. A separate group of 100 newborns were not exposed to maternal smoking; 20 newborns (C) were born SGA and 80 newborns (D) were born normal. Incidence rate of SGA in maternal smoking group:
a) 20%
b) 40%
c) 60%
d) 80%
e) 100%

294. A child was extubated and developed postextubation subglottic edema. The next step in management:
a) Furosemide
b) Reintubate immediately
c) Spironolactone
d) Nasal CPAP (continuous positive airway pressure)
e) Inhalation of aerosolized racemic epinephrine

295. An infant's physical examination reveals bilateral retinal hemorrhages. Most likely diagnosis:
a) Retinoblastoma
b) Hemophilia
c) von-Willebrand disease
d) Shaken baby syndrome

e) Head injury

296. All of the following is recommended in an infant who is a high-risk for developing food allergy and atopic dermatitis except:
a) Discontinue breast feeding if mother has eczema.
b) Only breast feeding for first 4 to 6 months of life
c) Use hypoallergenic milk
d) Delay introduction of solid foods until 4 to 6 months of age.
e) Delay introduction of cow’s milk until 1 year of age.

297. Influenza vaccine is indicated in all of the following conditions except:
a) Cystic fibrosis
b) Recurrent otitis media
c) Sickle cell anemia
d) Congenital heart disease
e) Asthma

298. A physical examination of a child reveals erythema chronicum migrans. Most likely diagnosis:
a) Rheumatic fever
b) Kawasaki disease
c) Lyme disease
d) Sarcoidosis
e) Steven-Johnson syndrome

299. A full-term SGA (small for gestational age) newborn appears with hepatosplenomegaly and rubelliform rash. Most likely diagnosis:
a) Rubella
b) Herpes
c) Toxoplasmosis
d) Syphilis
e) CMV

300. A 16-year-old girl has severe acne. She is going to use isotretinoin (13-cis-retinoid acid) for acne. The following investigation is indicated before the use of this medication:
a) EKG
b) Echocardiogram
c) Renal function test
d) Liver function test
e) Lung function test

301. The following deficiency can occur in puberty:
a) Protein
b) Fat
c) Carbohydrate
d) Sodium
e) Calcium

302. A total of 200 newborns were exposed to maternal smoking; 120 newborns (A) were born SGA and 80 newborns (B) were born normal. A separate group of 200 newborns were not exposed to maternal smoking; 40 newborns (C) were born SGA and 160 newborns (D) were born normal. The relative risk:
a) 3%
b) 20%
c) 40%
d) 60%
e) 80%

303. A 3-year-old boy was brought to the ER with history of pain and swelling of the right leg for the last 12 hours. His mother stated that the incident happened while the child was playing at home. She denies any child abuse. Physical examination reveals tenderness, mild redness, and swelling of the right leg. The boy is unable to walk. Most likely X-ray finding:
a) Normal
b) Osteomyelitis
c) Spiral fracture
d) Tendinitis
e) Septic arthritis

304. A newborn male appears with jaundice due to Rh-hemolytic disease. The most common antigen responsible for Rh-hemolytic disease:
a) A
b) B
c) C
d) D
e) E

305. A 36-year-old mother is pregnant. She is worried about Down syndrome. All of the following findings suggest Down syndrome except:
a) Increased HCG
b) Nuchal fat
c) Decreased alpha feto protein
d) Decreased unconjugated estriol
e) VSD

306. A male athlete is diagnosed to have visible herpetic lesions. He is not allowed to participate:
a) Golf
b) Tennis
c) Cycling
d) Wrestling
e) Running

307. Most common cause of homicide in adolescents:
a) Knife
b) Stick
c) Firearm
d) Baseball bat
e) Chain

308. A 2-year-old girl was brought to the ER with history of vomiting and diarrhea for the last 24 hours. The mother denies any history of fever. The girl was admitted 4 times in the last 6 months for gastroenteritis. The girl is admitted to the pediatric floor. She vomited once after admission. Mother notified the nurse. She stayed with her the whole night. She vomited again after several hours. She had no more episodes of diarrhea. The next day, mother went home. The girl had no more vomiting and diarrhea. Mother returned in the evening. A few hours later, the girl started to vomit again. Most likely diagnosis:
a) Child abuse
b) Viral gastroenteritis
c) Munchausen by proxy syndrome
d) Gastroesophageal reflux
e) Intestinal obstruction

309. The most commonly affected cranial nerve in Lyme disease:
a) 3rd
b) 5th
c) 7th

d) 9th
e) 12th

310. A total of 50 newborns were exposed to maternal smoking; 30 newborns (A) were born SGA and 20 newborns (B) were born normal. A separate group of 50 newborns were not exposed to maternal smoking; 10 newborns (C) were born SGA and 40 newborns (D) were born normal. The odds ratio:
a) 2
b) 3
c) 4
d) 5
e) 6

311. A full-term male newborn was admitted to NICU with the history of mild respiratory distress. Maternal history was unremarkable. Sepsis work up was performed. The preferred treatment:
a) Only ampicillin
b) Only gentamicin
c) Ampicillin and gentamicin
d) Vancomycin and cefotaxime
e) Ampicillin and cefotaxime

312. A 3-year-old boy was brought to the ER with history of first episode of generalized tonic-clonic convulsion associated with fever. The boy had fever (103.3°F or 39°C) for the last 48 hours. The seizure lasted for 9 minutes. The boy had history of URI symptoms for the last 2 days. Physical examination reveals postictal state, absence of otitis media, and mildly injected throat. Most likely diagnosis:
a) Febrile seizure
b) Seizure disorder
c) Meningitis
d) Pharyngitis
e) URI

313. A 7-day-old newborn female is diagnosed with hypothyroidism. The most sensitive laboratory indicator for primary hypothyroidism:
a) T3
b) T4
c) Free – T4
d) TRH
e) TSH

314. A boy developed anaphylactic reaction after a food intake. This reaction is due to:
a) IgA
b) IgG
c) IgM
d) IgD
e) IgE

315. Least likely postoperative complication of Hirschsprung disease:
a) Recurrent enterocolitis
b) Stricture
c) Fecal incontinence
d) Prolapse
e) Perianal abscess

316. A pregnant mother is diagnosed with active tuberculosis. She should be treated with anti-tuberculous drugs. The drug most likely causes fetal toxicity:
a) INH
b) Streptomycin

c) Rifampin
d) Ethambutol
e) Pyrazinamide

317. All of the following statements are true about iron poisoning except:
a) Oral deferoxamine is useful
b) Intravenous deferoxamine is useful
c) Activated charcoal is not useful
d) Gastric lavage is not useful
e) Aggressive whole bowel irrigation has questionable success.

318. A child appears with left periorbital ecchymosis. Physical examination reveals left eye ptosis, miosis, and opsoclonus with ataxia. Most likely diagnosis:
a) Retinoblastoma
b) Hyperthyroidism
c) Pheochromocytoma
d) Neuroblastoma
e) Rhabdomyosarcoma

319. A 6-year-old boy is diagnosed to have a coagulation abnormality. He was bleeding heavily after the tonsillectomy. Laboratory results reveal decreased factor VIII C, increased bleeding time, normal PT, and increased PTT. Most likely diagnosis:
a) Hemophilia A
b) Hemophilia B
c) Hemophilia C
d) Carrier hemophilia
e) von-Willebrand disease

320. A well-developed, well-nourished infant appears with systolic ejection murmur in the right upper sternal border. The murmur heard best during expiration. The 2nd heart sound was split. Most likely diagnosis:
a) Pulmonic stenosis
b) ASD
c) VSD
d) Aortic stenosis
e) Mitral regurgitation

321. Step-by-step development of normal puberty in male:
a) Testes, thining of scrotum, growth of penis, pigmentation of scrotum, pubic hair, deepening of voice, erection, and ejaculation.
b) Testes, growth of penis, thining of scrotum, pigmentation of scrotum, pubic hair, deepening of voice, erection, and ejaculation.
c) Testes, pubic hair, growth of penis, thining of scrotum, pigmentation of scrotum, deepening of voice, erection, and ejaculation.
d) Pubic hair, testes, growth of penis, thining of scrotum, deepening of voice, pigmentation of scrotum, erection, and ejaculation.
e) Testes, thining of scrotum, pigmentation of scrotum, growth of penis, pubic hair, deepening of voice, erection and ejaculation.

322. Step-by-step development of normal puberty in female:
a) Breasts, pubic hair, axillary hair, maturation of external genitalia, and menstruation.
b) Breasts, axillary hair, pubic hair, maturation of external genitalia, and menstruation.
c) Pubic hair, breasts, axillary hair, menstruation, and maturation of external genitalia.
d) Breasts, pubic hair, maturation of external genitalia, axillary hair, and menstruation.
e) Breasts, maturation of external genitalia, pubic hair, axillary hair, and menstruation.

323. A 14-month-old girl appears in a clinic for routine check-up. Physical examination reveals enamel erosion in the upper teeth. Mother stated that the girl usually prefers to sleep with nursing bottle containing milk. Most likely diagnosis:
a) Fluoride deficiency
b) Fluoride toxicity
c) Baby bottle tooth decay (BBTD)
d) Calcium deficiency
e) Calcium excess

324. A full-term male newborn was admitted to regular nursery. The baby was doing well. His mother developed chicken pox 24 hours after the baby was delivered. The next step in management:
a) Reassurance only
b) VZIG to the baby
c) Acyclovir therapy to the baby
d) VZIG to the mother
e) Acyclovir therapy to the mother

325. A 16-year-old girl appears in a clinic with the genital lesion. Physical examination reveals genital warts. She is sexually active. Most likely due to human papilloma virus type:
a) 2
b) 3
c) 4
d) 6
e) 10

326. All of the following statements are true about mammalian bites except:
a) All puncture wounds should be thoroughly cleaned.
b) All wounds should be irrigated with large amount of normal saline.
c) Irrigation with antibiotic-containing solution is preferred.
d) Infected wounds or wounds beyond 24 hours duration should not be sutured.
e) Amoxicillin-clavulanate is used for both prophylaxis and treatment.

327. A 7-year-old healthy boy with Down syndrome appears in a clinic for a routine check-up. The investigation may be appropriate:
a) Upper GI series
b) Opthalmologic examination
c) Echocardiogram
d) Hematologic evaluation
e) Cervical X-ray

328. Mode of inheritance in ataxia telangiectasia:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

329. A female child walks well and runs stiffly. She kisses her parents and helps with housework. She says 10 words but cannot put
3 words together. She uses words for her needs. She feeds herself with a spoon. She can build a tower with 4 cubes.
Most likely age in months:
a) 12
b) 15
c) 18
d) 24

e) 30

330. A 36-hour-old male newborn appears with jaundice. He is receiving breast milk every 3 – 4 hours. Mother stated that the baby cries between feeding. Mother’s blood type is A-positive and the baby’s blood type is O-negative, Coombs negative. The serum bilirubin level is 16 mg/dL at 36 hours of life. The baby’s birth weight was 3.4 kg. The baby’s weight after 24 hours is 3.2 kg. Most likely diagnosis:
a) Rh-hemolytic disease
b) ABO hemolytic disease
c) Physiologic jaundice
d) Breast-milk jaundice
e) Breast-feeding jaundice

331. Breast-feeding is not allowed when a mother is taking following medication:
a) Amoxicillin
b) Rifampin
c) Acyclovir
d) Cyclosporine
e) Aztreonam

332. A female child is diagnosed with hyperkalemia. Physical examination reveals irregular and rapid heart rates. The serum K level is 7.5 mEq/L. The rest of the SMA 6 results are normal. The first drug of choice in this patient:
a) Intravenous glucose and insulin
b) Oral kayexalate
c) Slow intravenous calcium gluconate with ECG monitoring
d) Intravenous sodium bicarbonate
e) Intravenous salbutamol

333. The complications of inhaled steroids includes all of the following except:
a) Dysphonia
b) Growth impairment
c) Oropharyngeal candidiasis
d) Disseminated varicella infection
e) Dysarthria

334. A male child was admitted to PICU for a bacterial pneumonia. He was admitted 3 times previously for recurrent infections and diarrhea. Physical examination revealed lymphadenopathy, bilateral rales, and a skin abscess. His parents are healthy. Most likely diagnosis:
a) HIV infection
b) Leukocyte adhesion deficiency
c) Chediak-Higashi syndrome
d) Myeloperoxidase deficiency
e) Chronic granulomatous disease

335. A female child was admitted in the pediatric ward for anemia. Her hemoglobin was 6 mg/dL and hematocrit was 18. During the packed-RBCs transfusion, she developed severe anaphylactic reactions. The blood was returned to the blood bank for further checking. Blood transfusion was stopped immediately. The test results revealed that the girl received properly matched blood. Most likely diagnosis:
a) Selective IgA deficiency
b) Minor group incompatibility
c) ABO incompatibility
d) Rh-hemolytic disease
e) Selective IgM deficiency

336. A total of 500 newborns were exposed to maternal alcohol; 300 newborns (A) were born SGA and 200 newborns (B) were born normal. A separate group of 500 newborns were not exposed to maternal alcohol; 100 newborns (C) were born SGA and 400 newborns (D) were born normal. The attributal risk:
a) 20%
b) 40%
c) 60%
d) 80%
e) 90%

337. A 7-day-old female child is diagnosed with MSUD (maple syrup urine disease). All of the following are elevated except:
a) Leucine
b) Valine
c) Alanine
d) Isoleucine
e) Alloisoleucine

338. A 10-year-old boy was admitted to PICU after a head injury. He was intubated and was placed on a mechanical ventilator. After 24 hours of admission, physical examination reveals flexion of both upper extremities and extension of both lower extremities. Both pupils are constricted. Most likely complication:
a) Meningitis
b) Encephalitis
c) Uncal herniation
d) Decorticate posture
e) Decerebrate posture

339. A boy can stand momentarily in one foot. He feeds himself and knows his gender. He dresses with supervision. He copies circle but cannot draw a person or square. He cannot hop. He cannot use toilet without help. He can build a tower of 10 cubes. Most likely age in years:
a) 2
b) 3
c) 4
d) 5
e) 6

340. A full-term newborn boy is admitted to a regular nursery. Physical examination reveals white reflex in pupil of the left eye. The rest of the physical examination is normal. Most likely diagnosis:
a) Cataract
b) Retinoblastoma
c) Neuroblastoma
d) Galactosemia
e) Lens dislocation

341. A full-term newborn is admitted to NICU with the right forearm deformity. Physical examination reveals short and deformed right forearm. X-ray reveals absence of radius in the right arm. Most likely associated cutaneous manifestation:
a) Jaundice
b) Hemangioma
c) Urticaria
d) Eczema
e) Thrombocytopenia / petechiae

342. A preterm 26 weeks gestational age newborn required surgical ligation for PDA (patent ductus arteriosus). All of the following are expected after surgical ligation of PDA except:
a) Child gains weight
b) Cardiac failure disappears

c) Less respiratory infections
d) EKG becomes normal
e) Absence of a functional systolic murmur over pulmonary area.

343. A 3-year-old girl was treated for right otitis media. A routine follow-up examination was performed 6 weeks after the therapy was completed. The examination revealed middle-air fluid in the right ear. The next step in management:
a) Repeat the same antibiotic therapy
b) Use another antibiotic
c) Tympanostomy tube
d) Myringotomy
e) Re-examination after 2 weeks

344. A 7-year-old boy is diagnosed with primary hyperthyroidism. Thyroid function test (TFT) should reveal:
a) Elevated T4, normal T3, elevated TSH
b) Normal T4, elevated T3, elevated TSH
c) Decreased T4, decreased T3, elevated TSH
d) Elevated T4, elevated T3, decreased TSH
e) Elevated T4, elevated T3, elevated TSH

345. A 5-year-old girl appeared in the ER with history of burn. The criteria for hospital admission in a burn patient includes all of the following except:
a) Smoke inhalation
b) Suspected child abuse
c) Burn in the face
d) Electrical burns
e) Burn less than 10% of body surface

346. A 14-year-old boy is diagnosed with asthma. He is receiving theophylline. His doctor wants to add zileuton. The next step in management:
a) Increase theophylline
b) Decrease theophylline by 20%
c) Decrease theophylline by 30%
d) Decrease theophylline by 40%
e) Decrease theophylline by 50%

347. The true statement about breast milk:
a) High iron
b) High calcium
c) Low phosphorus
d) High vitamin K
e) Low cholesterol

348. All of the following statements are true about rabies vaccination except:
a) Vaccine is given in deltoid muscle
b) Vaccine is given in anterolateral thigh in infants and young children.
c) Vaccine is very effective in gluteus muscle.
d) Five doses are recommended for postexposure prophylaxis.
e) Three doses are recommended for pre-exposure prophylaxis

349. Time to perform orchiopexy for undescended testes:
a) 3 – 6 month
b) 6 – 9 month
c) 9 – 15 month
d) 15 – 20 month
e) 20 – 24 month

350. A 16-year-old boy developed left homonymous hemianopsia. Most likely site of lesion:
a) Left optic tract
b) Left optic nerve
c) Right optic nerve
d) Left retina
e) Right optic tract

351. A female child was diagnosed with HIV infection. She was receiving multi-drug therapy. Her condition was deteriorating despite therapy. Laboratory test results revealed a decreasing $CD4^+$ count. The next practical approach in management:
a) Increase the doses
b) Increase the frequencies
c) Change one drug
d) Discontinue at least one drug
e) Change at least two drugs

352. A 7-day-old boy appears in a clinic for routine check-up. Her mother noticed at home that the boy stops breathing for about 2-5 seconds which is followed by a rapid breathing. She denies any cyanotic episode. The next step in management:
a) Reassurance only
b) Pneumogram
c) Chest X-ray
d) EKG
e) Admit for sepsis work up

353. A preterm female infant was delivered by NSVD. The girl required positive pressure ventilation, a few chest compression, and finally intubation. The girl was admitted to NICU in a stable condition. She was placed on a mechanical ventilator. The next step in management:
a) Head sonogram
b) Chest X-ray STAT
c) Give sodium bicarbonate
d) SMA 6
e) Serum glucose concentration

354. A 12-month-old boy appears in a clinic for a routine check-up. The boy is doing well. He sleeps well and feeds well. Physical examination reveals weight and height are above 95 th percentile. His head circumference is just below the 90 th percentile. He has an excessive subcutaneous fat. The rest of the physical examination is normal. Most likely cause his obesity:
a) Fruit juice
b) Milk
c) Genetic
d) Constitutional
e) Solid food

355. A full-term LGA (large for gestational age) male was born by NSVD and was diagnosed to have right fracture clavicle. Most appropriate management:
a) Orthopedic consult STAT
b) Shoulder cast
c) Morphine for pain
d) Chest X-ray
e) Secure the right hand in front of the chest with the shirt.

356. A 3-year-old boy appears in the ER with history of respiratory distress, barking cough, and stridor for the last 2 hours. The boy has no fever. Physical examination reveals temperature 98.6°F (37°C), respiratory rate 30 per minute, and blood pressure 85/50. Most likely diagnosis:
a) Croup

b) Foreign body inside trachea
c) Asthma
d) Epiglottitis
e) Foreign body inside bronchus

357. The true statement about pyloric stenosis:
a) More common in first-born female child.
b) Incidence of pyloric stenosis is 20% if father has pyloric stenosis.
c) Usually presents with bilious vomiting.
d) Hypochloremic metabolic alkalosis is present.
e) Ultrasonographic finding is not conclusive.

358. Sensorineural hearing loss is common:
a) Otitis media
b) Cerumen
c) CMV
d) Perforated ear drug
e) Middle ear fluid

359. The true statement about motor vehicle accident (MVA):
a) Drivers educational classes bring more young drivers on street, and this increases likelihood of more MVA.
b) Most common cause of MVA in adolescents is the use of marijuana (50% of cases)
c) Most accidents happen between 8 A.M. to 4 P.M.
d) The second most common cause of MVA is the use of alcohol (15% of cases).
e) Police should give anticipatory guidance to adolescents.

360. A rapid correction of fluid in a child with hypernatremic dehydration results in:
a) IVH
b) Subdural hemorrhage
c) Cerebral cells atrophy
d) Cerebral cells swelling
e) PVL (periventricular leukomalacia)

361. A 3-year-old boy appeared in the ER with history of diarrhea for the last 3 to 4 days. Physical examination reveals dry mucous membrane, sunken eyes, no tears, and mild tachycardia. The best therapeutic approach:
a) Oral rehydration therapy
b) Intravenous $D_{10}$ water
c) NPO plus IV hydration
d) Intravenous $D_5$ water
e) Intravenous 3% sodium chloride

362. An average 4-year-old child usually watches TV (television) in hours per week:
a) 10 to 20
b) 20 to 30
c) 30 to 40
d) 40 to 45
e) 45 to 50

363. All of the following statements are true about inhaled nitric oxide therapy except:
a) Pulmonary vasodilator
b) Systemic hypotension
c) Methhemoglobin formation
d) Nitrogen dioxime formation
e) Decreases pulmonary vascular resistance

364. A child is diagnosed with a neuromuscular disorder. The definitive diagnostic study:
   a) CPK
   b) EMG (electromyography)
   c) Nerve conduction study
   d) MRI
   e) Muscle biopsy

365. A child is going to visit to a developing country with his parents. All of the following recommendations are true for diarrhea prophylaxis except:
   a) Use antibiotic
   b) Use bottled water
   c) Eat hot food
   d) Maintain personal hygiene
   e) Eat bread

366. A child is diagnosed with neurofibromatosis (NF 1). The clinical presentation which is diagnostic for this condition:
   a) Five café-au-lait spots over 5 mm in diameter.
   b) Four café-au-lait spots over 4 mm in diameter.
   c) Eye examination reveals hamartoma in the iris and absence of café-au-lait spots.
   d) Kyphoscoliosis without café-au-lait spots.
   e) Six café-au-lait spots 6 mm in diameter plus father has neurofibromatosis (NF 1).

367. A fetus is diagnosed with hydrops. Most likely cause:
   a) CMV
   b) Rubella
   c) Parvovirus B 19
   d) Herpes
   e) Toxoplasmosis

368. A 14-year-old boy is diagnosed with mumps orchitis. Most likely complication:
   a) Testicular cancer
   b) Testicular hypertropy
   c) Encephalitis
   d) Meningitis
   e) Testicular atrophy

369. All of the following statements are true about prevention of CMV infection except:
   a) Use CMV-free blood products
   b) Use CMV-free donors for transplantation
   c) CMV seropositive pregnant mothers have a high risk of delivering a child with CMV
   d) For renal transplant recipients, live attenuated vaccine (active immunization) does not protect from CMV infection but reduces the severity of infection.
   e) Vaccine is not useful against naturally acquired infection.

370. A full-term black female is admitted to a regular nursery. Physical examination reveals gray color and slightly pigmented fundus during opthalmologic examination. Most likely diagnosis:
   a) Retinitis pigmentosa
   b) Chorioretinitis
   c) Optic nerve atrophy
   d) Papilledema
   e) Normal retina

371. All of the following are indications for tonsillectomy except:
   a) Obstruction due to tonsils
   b) Tumor of tonsills

c) Middle-ear deafness
d) Peritonsillar abscess with prior history of tonsillitis
e) Recurrent peritonsillar abscess

372. A male child was brought to the ER with history of fever (103°F) and respiratory distress. He had fever for the last 3 days. He developed respiratory distress for the last 8 hours. Physical examination reveals rales over the right upper chest wall and tachypnea. Chest X-ray reveals right upper lobe pneumonia with a bulging fissure. Most likely organism:
a) S. aureus
b) Streptococcus pneumoniae
c) Klebsiella
d) Mycoplasma pneumonia
e) Streptococcus pyogenes

373. The most common cause of fatal car accidents in adolescents:
a) Marijuana use
b) Methanol consumption
c) Cocaine use
d) Ethanol consumption
e) Suicidal attempt

374. A 5-year-old black male boy appears with mild jaundice. He looks pale. He was taking sulfur drugs for the last 24 hours. CBC reveals hemoglobin 6 g/dL, hematocrit 18, reticulocyte count 14%, and presence of Heinz bodies in a peripheral smear. Serum bilirubin level is 6 mg/dL. Most likely diagnosis:
a) G6PD deficiency
b) Sickle cell disease
c) Malaria
d) Thalassemia major
e) Gallbladder stone

375. A female athlete wants to prevent heat related illness during practice in the afternoon. The best recommendation:
a) Wear loose fitting clothes
b) Take unrestricted fluids
c) Take salt tablets
d) Do practice at night
e) Practice in a place with an air condition facility

376. A newborn male child weighs 8 lb at birth. He will become 16 lb:
a) 3 months
b) 5 months
c) 7 months
d) 9 months
e) 12 months

377. A 4-year-old girl's measured length is 44 inches. What was her approximate length at birth?
a) 20 inches
b) 21 inches
c) 22 inches
d) 23 inches
e) 24 inches

378. A 2-month-old boy was brought to a clinic by his mother for a routine check up. The boy has been 'spitting up' a small amount of milk after each feeding. He drinks 4 to 5 oz of Enfamil with iron every 4 hours. He has gained adequate weight. Physical examination is unremarkable. The next step in management:
a) Esophageal pH monitoring

b) Switch to a soy formula
c) Upper GI series
d) Reassurance only
e) Use high caloric formula with a solid food

379. A female child appears in the ER with a severe asthma attack. She has been using albuterol inhalation pump. Physical examination reveals tachypnea, intercostal and subcostal retractions, and expiratory wheezes. She is in a respiratory failure. The most important finding suggests impending respiratory failure:
a) Hypoxia
b) Hypercarbia
c) Fatigue
d) Lethargy
e) Hypocarbia

380. A male football player appears in a clinic with history of trauma in the left thigh. He has been limping since the trauma. Physical examination reveals left thigh swelling but full range of knee and hip joints movement. CBC reveals a drop of hemoglobin from 16 to 12. Most likely diagnosis:
a) Hematoma in the left thigh
b) Osteomyelitis
c) Ewing sarcoma
d) Osteoblastoma
e) Osteosarcoma

381. The best diagnostic procedure for a posterior fossa brain tumor:
a) CT-scan
b) Brain scan
c) Skull X-ray
d) Ultrasonography
e) MRI

382. A pregnant mother had left cleft lip and palate at birth. She is worried about her unborn child. The risk that the child will have unilateral cleft lip and palate:
a) 2%
b) 4%
c) 10%
d) 25%
e) 50%

383. A full-term 12-hour-old newborn did not pass meconium. Mother is worried. Most of the full-term newborns pass meconium within:
a) 12 hours
b) 24 hours
c) 48 hours
d) 60 hours
e) 72 hours

384. The deficiency of a trace element causes cardiomyopathy:
a) Zinc
b) Copper
c) Cobalt
d) Selenium
e) Manganese

385. A male obese child’s total cholesterol level is 169 mg/dL. His mother is worried. The next step in management:
a) Repeat another cholesterol level.
b) Fasting lipid profile should be performed.

c) Fat intake should not exceed 30% of total calories
d) Start cholestyramine
e) No intervention is needed and should be re-checked in 5 years.

386. A 9-month-old girl appears with out-toeing and lateral hip rotation. Mother is worried. The next step in management:
a) Orthopedic consult STAT
b) X-ray both hip joints
c) Ultrasonography of the knee joints
d) X-ray of both legs
e) Reassurance only

387. All of the following can cause Bell's palsy (unilateral facial palsy) except:
a) Lyme disease
b) Epstein-Barr virus
c) Herpes virus
d) Mumps virus
e) Rubella virus

388. A 5-day-old boy is receiving phenobarbital for seizure. The half-life of phenobarbital is 96 hours. The steady state of phenobarbital is achieved:
a) 192 hours
b) 288 hours
c) 384 hours
d) 480 hours
e) 576 hours

389. The side effect of furosemide therapy:
a) Calcuria
b) Elevated serum calcium level
c) Decreases BUN
d) Decreases creatinine
e) Elevated serum K level

390. A 2-day-old male infant is diagnosed with malrotation with obstruction. The best diagnostic procedure:
a) Abdominal ultrasonography
b) X-ray of the abdomen
c) Barium enema
d) Guiac positive stool
e) Upper GI series

391. A 15-year-old boy developed swelling and discomfort in the left breast for the last 3 days. Physical examination reveals swelling and tenderness in the left breast. His growth and development are normal. The next step in management:
a) Head CT scan
b) Abdominal CT scan
c) Ultrasonography of the abdomen
d) MRI of the pituitary
e) Reassurance only

392. Most common karyotype in true hermaphroditism:
a) 46, XY
b) 46, XX
c) 45, X/46, XY
d) 45, X
e) 45, X/46, X, dic Y

393. A 13-year-old boy appeared in a clinic for a routine check up. His blood pressure was between 90 th and 95 th percentile. Blood pressure was recorded three times. He was mildly obese. The next step in management:
   a) Check his parents blood pressure
   b) Perform serum SMA 6
   c) Start antihypertensive drug
   d) Counsel to reduce body weight
   e) Perform serum cholesterol level

394. Most common cause of thromboembolic stroke in children:
   a) Coagulation disorder
   b) Polycythemia
   c) CNS trauma
   d) Aortic injury
   e) Cardiac abnormalities

395. The true statement about null hypothesis:
   a) Type I error means null hypothesis is false and rejected
   b) Type I error means null hypothesis is true, but rejected
   c) Type II error means null hypothesis is true and accepted
   d) Type II error means null hypothesis is true, but rejected
   e) Observed differences are not due to random variation in data.

396. The true statement about milk:
   a) Cow’s milk contains less vitamin K than breast milk
   b) Cow’s milk has low vitamin D.
   c) Cow’s milk has high vitamin C.
   d) Breast milk has low vitamin C.
   e) Breast milk has low vitamin B-complex.

397. All of the following are contraindications to a participation in sports except:
   a) Heat illness
   b) Fever
   c) Carditis
   d) Acutely enlarged liver
   e) Acutely enlarged spleen

398. An infant appears in the ER with an abdominal mass and hematuria. Ultrasonography reveals a renal mass. Intravenous pyelography reveals splaying of calices. Most likely diagnosis:
   a) Neuroblastoma
   b) Pheochromocytoma
   c) Wilms tumor
   d) Polycystic kidney
   e) Multicystic kidney

399. A 15-year-old girl appears in the clinic with history of a dry cough with harsh, ‘barking’ quality for the last 2 weeks. She has no fever. She had history of mild whitish vaginal discharge for the last 3 weeks. She had no problems in sleeping at night. Her mother said that she did not cough at night while sleeping. Physical examination reveals mildly injected throat. Most likely diagnosis:
   a) Pharyngitis
   b) Chlamydia
   c) Croup
   d) Laryngeal papilloma
   e) Habit cough

400. A 6-year-old boy was admitted to PICU with diabetic ketoacidosis (DKA). The immediately goal of therapy:
   a) Start regular insulin

b) Start sodium bicarbonate
c) Start NPH insulin
d) Expansion of intravascular volume
e) Catheterize the urinary bladder to measure urinary input and output

401. Most common organism responsible for an infection in a burn patient:
a) Pseudomonas aeruginosa
b) S. aureus
c) S. epidermidis
d) E. coli
e) Streptococcus pneumoniae

402. A toddler male child is diagnosed with hemophilia. Most important site of hemarthroses in a toddler:
a) Knee
b) Hip
c) Ankle
d) Shoulder
e) Elbow

403. A child was brought to the ER. He was resuscitated but expired. Mother told that the boy was scheduled to have a cardiac surgery
6 weeks from now. Autopsy was performed. Most likely diagnosis:
a) Mitral stenosis
b) Mitral valve prolapse
c) Pulmonic stenosis
d) Aortic coarctation
e) Congenital aortic stenosis

404. A child is diagnosed to have a blistering distal dactylitis. Most common organism:
a) Herpes
b) S. aureus
c) Pseudomonas aeruginosa
d) S. epidermidis
e) Beta-hemolytic Streptococci

405. All of the following drugs causing hypoadrenalism except:
a) Ketoconazole
b) Phenytoin
c) Phenobarbital
d) Rifampin
e) INH

406. A female child appears in a clinic for a routine check up. She developed a transient urticarial rash after the previous vaccination. She is due for the same vaccination. The next step in management:
a) Don’t give vaccination
b) Give half of the vaccine
c) Vaccine should be given
d) Give three-fourth of the vaccine
e) Give antihistamine 30 minutes before vaccination.

407. A full-term male newborn is delivered by NSVD. His mother has history of lupus. The most common complication:
a) Mitral stenosis
b) Aortic stenosis
c) Cardiac tumor
d) Congenital heart block

e) VSD

408. A 14-year-old girl appears with sudden onset of left chest pain for the last 2 hours. She has no fever. She denies history of trauma. Her menstrual period is regular, usually lasts for 5 days, and presently, she is on day 3 of her period. Most likely diagnosis:
a) Pneumomediastinum
b) Pneumothorax
c) Pulmonary embolism
d) Asthma
e) Angina

409. A 2-year-old boy received an evaporated milk and appeared with progressive cyanosis that was not improved with oxygen administration. Most likely diagnosis:
a) Cyanotic heart disease
b) Critical aortic stenosis
c) CNS hemorrhage
d) Methemoglobinemia
e) Aortic coarctation

410. A 10-year-old girl appears with dysuria, suprapubic pain, urgency, frequency, and incontinence. Physical examination reveals temperature 98.6°F, presence of suprapubic tenderness. Most likely diagnosis:
a) UTI
b) Perinephric abscess
c) Renal stone
d) Pyelonephritis
e) Cystitis

411. The true statement about the management of recurrent acute otitis media except:
a) Adenoidectomy is indicated
b) Xylitol may be useful
c) Gastroesophageal reflux should be treated.
d) Cigarette smoking at home should be stopped.
e) Evaluation for allergy may be useful in some children.

412. A 16-year-old girl is diagnosed with PID (pelvic inflammatory disease). The girl is symptomatic and is admitted to a hospital. The next step in management:
a) Intravenous doxycycline
b) IM gentamicin
c) Intramuscular clindamycin
d) PO doxycycline
e) Intravenous cefoxitin plus doxycycline

413. A 4-year-old girl was brought to the ER with history of vomiting and pain in the upper abdomen for the last 5 hours. She is developmentally delayed. She swallowed unusual materials. Physical examination reveals palpable abdominal mass. Most likely diagnosis:
a) Duodenal stenosis
b) Malrotation
c) Pyloric stenosis
d) Bezoar
e) Jejunal atresia

414. Most common indication for liver transplantation:
a) Fatty liver
b) Alpha-1-antitrypsin deficiency
c) Hepatorenal syndrome
d) Acute hepatic necrosis
e) Extrahepatic biliary atresia

415. Most common cause of anosmia:
   a) URI
   b) Frontal lobe tumor
   c) Fracture of cribiform plate
   d) Refsum disease
   e) Kallmann syndrome

416. Most common organism causing peritonitis in CAPD (continuous ambulatory peritoneal dialysis):
   a) S. aureus
   b) Pseudomonas
   c) S. epidermidis
   d) Listeria
   e) Streptococcus pneumoniae

417. A male child developed severe anaphylactic reaction after IGIV (immune globulin intravenous). Most likely diagnosis:
   a) HIV
   b) IgM deficiency
   c) IgG deficiency
   d) Selective IgA deficiency
   e) IgE deficiency

418. Maximal growth of the brain or head occurs:
   a) 0 – 1 year
   b) 1 – 2 year
   c) 3 – 4 year
   d) 4 – 5 year
   e) 5 – 6 year

419. A child is diagnosed with cystic fibrosis. The nutritional therapy includes all of the following except:
   a) High protein
   b) High calorie
   c) High fat
   d) Low roughage
   e) All fat soluble vitamins

420. A 3-day-old female newborn developed bilateral purulent conjunctivitis. Most likely cause:
   a) Chemical
   b) Chlamydia
   c) Pseudomonas
   d) S. aureus
   e) Gonococcus

421. The true statement about the highest risk of delivering an infant with Down syndrome:
   a) A 31-year-old woman with a balanced translocation between chromosomes 14 and 21.
   b) A 39-year-old woman whose husband is 60 years old.
   c) A 25-year-old woman who has a child with Down syndrome.
   d) A 42-year-old woman without a family history of Down syndrome.
   e) A 30-year-old woman history of recurrent spontaneous abortions.

422. The true statement about the risk of recurrence of Down syndrome is 100%:
   a) Centric fusion of chromosome 21 and 14 translocation.
   b) Centric fusion of chromosome 21 and 13 translocation.
   c) Centric fusion of chromosome 21 and 15 translocation.
   d) Centric fusion of chromosome 21 and 11 translocation.

e) If mother is a balanced 21/21 translocation carrier.

423. An adolescent girl was diagnosed with lupus and was treated with prednisone. The most likely long-term complication of prednisone:
a) Malignancy
b) Loss of hearing
c) Loss of memory
d) Loss of vision
e) Glucose intolerance

424. A child is taking statins for a very high cholesterol level. The side-effects of statins include all of the following except:
a) GI disturbances
b) Sleep disturbances
c) Muscle pain
d) Headaches
e) Loss of hearing

425. A 14-year-old boy appears in the ER with history of left knee pain and swelling after sudden jumping. Most likely injury:
a) Anterior cruciate ligament
b) Medial meniscus
c) Posterior cruciate ligament
d) Lateral meniscus
e) Patellar ligament

426. Most common type of migraine:
a) Classic migraine
b) Uncomplicated migraine
c) Migraine variants
d) Common migraine
e) Complicated migraine

427. Most common route of HIV-infection in pediatric population:
a) Sexual contacts
b) Blood transfusions
c) Needle pricks
d) Mosquito bites
e) Vertical transmission from mother

428. A 13-year-old boy had a history of setting fire in the school. The management includes all of the following except:
a) Family therapy
b) Refer to a mental health professional
c) Parental intervention
d) Community work
e) Confined in a room for 48 hours

429. Most common cardiac lesion in trisomies:
a) ASD
b) VSD
c) Aortic stenosis
d) Mitral stenosis
e) Tricuspid regurgitation

430. Hemolytic-uremic syndrome is a side-effect of the following medication:

a) Cyclophosphamide
b) Oral contraceptives
c) Bleomycin
d) Doxorubicin
e) Vincristine

431. A 14-year-old boy is diagnosed with diabetes. He is receiving insulin injection. The recommendation of insulin therapy for a regular exercise:
a) Increase the dose by 10%
b) Increase the dose by 25%
c) Increase the dose by 50%
d) Decrease the dose by 25%
e) Decrease the dose by 10%

432. A 7-year-old girl had tonsillectomy 1 month ago. The true statement after tonsillectomy:
a) Reduction in nasal allergy
b) Reduction of rheumatic fever
c) Reduction of number of infections
d) Definitive improvement in nutrition
e) Definitive improvement in respiratory infections.

433. A 7-year-old boy appears in the ER with history of pain in the right ear and tinnitus due to trauma. Physical examination reveals a perforation of the tympanic membrane with a small amount of blood in the external auditory canal. The next step in the management:
a) Hydrogen peroxide
b) Start antibiotics
c) Perform hearing test
d) Refer to a ENT doctor
e) Reassurance only

434. A 2-year-old girl was referred for a developmental assessment. All of the following tests can be performed except:
a) Denver II
b) Early language milestone
c) Clinical adaptive test
d) Early screening inventory
e) Age and stages questionnaires

435. Treatment for anorexia nervosa includes of all of the following except:
a) Nutritional therapy
b) Modification of behavior
c) Psychotheapy to patient
d) Antidepressant medication
e) Moderate exercise

436. A 8-year-old girl was brought to the ER after a car accident. She makes sounds but not understandable. She opened her eyes with painful stimulation. Her upper extremities are flexed and lower extremities are extended. Modified Glasgow Coma Scale (MGCS):
a) 4
b) 5
c) 6
d) 7
e) 8

437. Most common complication of a single-dose total body irradiation (TBI):
a) Pulmonary fibrosis

b) CNS atrophy
c) Cataract
d) Myocardial fibrosis
e) Gonadal atrophy

438. A 3-day-old male newborn appears with vomiting, lethargy, and convulsion. Physical examination reveals odor of sweaty feet. Most likely diagnosis:
a) Isovaleric acidemia
b) Methylmalonic acidemia
c) Phenylketonuria
d) Hawkinsinuria
e) Maple syrup urine disease

439. A full-term female newborn was admitted to NICU with severe meconium aspiration. She was intubated in the delivery room and was placed on a mechanical ventilator IMV 40, PIP 20, PEEP 4, $FiO_2$ 100%. ABG reveals pH 7.24, $PCO_2$ 60, $PO_2$ 50, base deficit –15.4. She has both respiratory and metabolic acidosis. The next step in the management:
a) Correct respiratory acidosis before metabolic acidosis
b) Correct metabolic acidosis before respiratory acidosis
c) Correct metabolic acidosis only
d) Start dopamine drip
e) ABG is acceptable, therefore no intervention is required.

440. A child appeared in the ER with lethargy and palpitation. Physical examination revealed a hypotension and irregular heart beats. Cardiopulmonary resuscitation was failed. Mother stated that the child was receiving a prescribed drug:
a) Azithromycin
b) Alpha methyl dopa
c) Desipramine
d) AZT
e) Prednisone

441. A 9-year-old girl appears in the ER with history fever (103°F), chill, dysuria, and left flank pain. The diagnosis is UTI. The best diagnostic procedure for this patient:
a) Renal CT scan
b) VCUG
c) IVP
d) MRI
e) Ultrasonography

442. A woman is pregnant. This is her first trimester. She needs a radiologic investigation. She is worried. The true statement about the radiation effects on fetus:
a) Radiation dose up to 10 cGy is safe in all stage of development of the fetus.
b) Radiation dose of 100 cGy does not cause growth retardation
c) Radiation dose up to 15 cGy is safe.
d) Radiation dose up to 20 cGy is safe.
e) Radiation dose up to 25 cGy is safe.

443. The side-effect of rotavirus vaccine:
a) Flu-like symptoms
b) Hepatitis
c) Intussuception
d) Localized abscess
e) Malrotation

444. A 15-month-old healthy boy is due to for his MMR vaccination. His parents are healthy. His paternal uncle has a HIV infection and he lives with them. The next step in the management:
   a) MMR vaccine should not be given.
   b) His uncle should look for another place to live before MMR is given.
   c) Give MMR in 18 months of age.
   d) MMR should be given.
   e) Isolate the child from his uncle.

445. Most common mode of transmission in G6PD deficiency:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

446. A 14-year-old boy was brought to the ER with a history of head trauma while playing baseball. He is awake and alert. Initially he was unconscious for 1-2 minutes, then he was asymptomatic. During physical examination the boy became unconscious and less responsive. Most likely diagnosis:
   a) Cerebral contusion
   b) Cerebral concussion
   c) Subdural hematoma
   d) Epidural hematoma
   e) Subarachnoid hemorrhage

447. A 15-year-old girl was brought to the ER with a history of unconsciousness, a brief tonic contraction of muscles of face and extremities, and upward deviation of both eyes during gym class. She never had a seizure activity. Mother denies family history of seizure. Physical examination was unremarkable. EEG was normal. Most likely diagnosis:
   a) Seizure disorder
   b) Syncope
   c) Prolonged QT syndrome
   d) Status epilepticus
   e) Hysteria

448. A shift to left in oxygen dissociation curve occurs in all of the following except:
   a) Cyanotic heart disease
   b) Hypothermia
   c) Acidosis
   d) Methemoglobinemia
   e) Myoglobinuria

449. A 7-year-old boy is diagnosed to have a obstructive lung disease. All of the following are abnormal except:
   a) Total lung capacity
   b) Residual volume
   c) Vital capacity
   d) Functional residual capacity
   e) Diffusing capacity of carbon monoxide

450. The side effect of zinc toxicity:
   a) Liver failure
   b) Renal failure
   c) Pancreatic failure
   d) Growth retardation
   e) Acrodermatitis enteropathica

451. A 2-week-old girl appears in the clinic for a routine check up. She has biphasic stridor that is more prominent during inspiration. She has hoarseness and barking cough. Most likely diagnosis:
   a) Subglottic hemangioma
   b) Laryngeal nodule
   c) Tracheomalacia
   d) Croup
   e) Laryngeal web

452. A 17-year-old girl has been taking retinoic acid for severe acne. She became pregnant while taking retinoic acid. The fetus may develop:
   a) Turner syndrome
   b) Noonan syndrome
   c) Di George syndrome
   d) Down syndrome
   e) Klinefelter syndrome

453. A pregnant mother is diagnosed with hypothyroidism 1 week ago. She is 8 months pregnant now. Mother is worried because she was symptomatic for the last 9 months. Most likely effect on the fetus:
   a) May cause CNS damage
   b) Cardiac damage
   c) Gonadal damage
   d) Pulmonary damage
   e) Liver damage

454. Most common posterior fossa tumor of childhood:
   a) Chiasmal glioma
   b) Ependymoma
   c) Cerebellar astrocytoma
   d) Craniopharyngioma
   e) Teratoma

455. A full-term male newborn appeared with multiple congenital anomalies. He developed apneas and seizures. Physical examination reveals microcephaly, cleft lip, cleft palate, small eyes, and midline scalp defects. Most likely diagnosis:
   a) Down syndrome
   b) Trisomy 18
   c) Trisomy 16
   d) Trisomy 13
   e) Noonan syndrome

456. Complications of hyperventilation in PPHN (persistent pulmonary hypertension) include all of the following except:
   a) Increased cardiac output
   b) Increased barotrauma
   c) Pneumothorax
   d) Hyperinflation of lungs
   e) Decreased fluid requirement

457. A child developed anaphylactic reaction to an egg. The child should not receive the following vaccination:
   a) Hepatitis B vaccine
   b) DTaP
   c) Hib
   d) Influenza vaccine
   e) IPV

458. A mother has asthma. Father is normal. She has one boy. The risk of asthma to this boy:

a) 2%
b) 4%
c) 10%
d) 25%
e) 50%

459. A full-term newborn female was born by NSVD. Physical examination reveals head circumferance is 39.5 cm, weight is 3.5 kg, and length 21 inches. Most likely diagnosis:
a) Normocephaly
b) Macrocephaly
c) Short stature
d) Microcephaly
e) Large for gestational age

460. A 5-year-old boy appears in a clinic for routine check-up. Physical examination reveals grade 2/6, systolic, musical heart murmur in the left sternal border. Most likely diagnosis:
a) PDA
b) VSD
c) ASD
d) Aortic stenosis
e) Innocent murmur

461. A 10-year-old girl appeared in a clinic with history of white vaginal discharge for the last 3 weeks. She had similar episodes 6 weeks ago but resolved spontaneously. Physical examination reveals normal growth and development, and mild whitish discharge from the vagina. The smear of the discharge reveals 2 to 3 WBCs per high power field and normal vaginal cells. Most likely diagnosis:
a) Chlamydia infection
b) Candida infection
c) Trichomonas infection
d) Normal
e) Foreign body inside the vagina

462. A 17-year-old boy appeared in the ER about 1 A.M. He is unconscious, and unresponsive to painful stimulation. The boy was intubated due to respiratory depression. Physical examination reveals hypothermia (96°F), hypotension (BP 80/50), heart rate 50 per minute, and bilateral pupillary constrictions. The next step in the management:
a) Atropine
b) Naloxone
c) Dopamine
d) Isoproterenol
e) Digoxin

463. The side-effect for prolonged use of phenobarbital:
a) Bradycardia
b) Hypoactivity
c) Hyperactivity
d) Respiratory stimulation
e) Hepatotoxicity

464. A 3-year-old girl is diagnosed with FTT (failure to thrive). She lives with her mother and step-father. All of the following statements are true about FTT except:
a) Dietary history is helpful.
b) Nonorganic FTT is more common than organic FTT.
c) Nutrional neglect is an important factor in FTT.
d) Parent-child interaction is important.
e) The recommended diet should be about 150 Kcal/kg (ideal weight)/day.

465. A 15-year-old boy was diagnosed with right ankle sprain 1 year ago. He has been receiving rehabilitation therapy for the last 1 year. He is still limping due to a right ankle problem. The next step in management:
a) Continue physiotherapy
b) Reassurance only
c) Put a cast in the right ankle
d) Put a whole right leg cast
e) Surgical intervention

466. Most common complication of ECMO (extra corporeal membrane oxygenation):
a) Stroke
b) Atelactasis
c) Hemolysis
d) Edema
e) Intracerebral bleeding

467. A 9-year-old girl came to a clinic for routine check up. Her mother wants to know her daughter's onset of puberty. The most important determinant factor to predict the onset of puberty:
a) Nocturnal LH pulses
b) Estrogen levels
c) Progesterone levels
d) Growth hormone levels
e) Thyroid stimulating hormone levels

468. A 5-year-old boy is diagnosed with cystic fibrosis. He developed fever (102.5°F) and respiratory symptoms. Antibiotic therapy should cover all of the following organisms except:
a) S. aureus
b) P. aeruginosa
c) B. cepacia
d) S. epidermidis
e) Nontypable H. influenzae

469. A full-term male newborn appears with low birth weight, prominent occiput, hypertonia, rockerbottom feet, and closed fist with the index finger overlapping the third digit (middle finger) and fifth digit (little finger) overlapping the fourth digit (ring finger). Most likely diagnosis:
a) Trisomy 21,
b) Trisomy 18
c) Trisomy 13
d) Trisomy 9
e) Fragile X-syndrome

470. A 13-year-old girl who is a ballet dancer. A ballet dancer commonly has the following problem:
a) Overweight
b) Mental retardation
c) Turner syndrome
d) Overeating
e) Delayed puberty

471. A preterm infant with respiratory distress syndrome was placed on a mechanical ventilator. The infant developed right pneumothorax. The most important factor causing pneumothorax in a patient on mechanical ventilator:
a) High PEEP
b) High PIP
c) Low oxygen
d) High flow rate
e) High expiratory time

472. All of the following drugs increased theophylline clearance and decreased toxicity except:
   a) Erythromycin
   b) Phenobarbital
   c) Phenytoin
   d) Rifampin
   e) Isoproterenol

473. Most common cause of childhood bacterial pneumonia:
   a) S. aureus
   b) Streptococcus pneumoniae
   c) Pseudomonas
   d) Streptococcus pyogenes
   e) Group B Streptococcus

474. The best diagnostic study for a congenital toxoplasmosis:
   a) Urine culture
   b) Blood culture
   c) IgG for toxoplasmosis
   d) IgM specific for toxoplasma by ISAGA (immunosorbent agglutination assay)
   e) IgM-ELISA (enzyme-linked immunosorbent assay)

475. A female child is admitted to a pediatric floor with orbital cellulitis. Most common cause of orbital cellulitis in children:
   a) Conjunctivitis
   b) Otitis media
   c) Paranasal sinusitis
   d) Pharyngitis
   e) Metastatic tumor

476. The true statement about renal tubular acidosis (RTA):
   a) In proximal RTA, 40% of sodium bicarbonate is absorbed by proximal tubule and 60% reaches to the distal tubule.
   b) In distal RTA, 85% of sodium bicarbonate is absorbed by proximal tubule, and 5 – 12% is absorbed by distal tubule.
   c) Normally 60% of sodium bicarbonate is absorbed by proximal tubule and 40% by distal tubule.
   d) In proximal RTA, serum K is elevated.
   e) In distal RTA, serum Na is elevated.

477. A 12-month-old boy is diagnosed with iron-deficiency anemia. He is drinking cow's milk. The laboratory findings include all of the following except:
   a) Reduced serum ferritin
   b) Reduced MCV
   c) Normal TIBC
   d) Elevated platelet counts
   e) Normal WBC counts

478. A 14-year-old girl is diagnosed with scoliosis. The other organ defect associated with scoliosis:
   a) Renal
   b) Eye
   c) Liver
   d) Cardiac
   e) ENT

479. A 10-year-old boy appeared in the ER with right knee injury while playing basket ball. Physical examination reveals swollen and tender right knee. Knee X-ray reveals a fracture through a portion of physis extending through epiphysis and into adjacent joint. Most likely diagnosis Salter-Harris type:
a) I
b) II
c) III
d) IV
e) V

480. Most common cause of ESRD (end stage renal disease) in children:
a) Glomerulonephritis
b) Focal segmental glomerulosclerosis
c) Pyelonephritis
d) Metabolic
e) Congenital renal disease

481. The drug of choice for infantile spasms:
a) Sodium valproate
b) Phenytoin
c) Phenobarbital
d) Carbamazepine
e) ACTH (adrenocorticotropic hormone)

482. The serum alpha fetoprotein is elevated:
a) Hepatoblastoma
b) Cirrhosis
c) Renal failure
d) Down syndrome
e) Fragile X-syndrome

483. A male child appears in a clinic with mental retardation. His parents are normal. His uncle is mentally retarded. Physical examination reveals enlarged testes. The diagnosis is made by:
a) Denver developmental test
b) Auditory testing
c) Testicular scan
d) Testicular biopsy
e) DNA analysis for CGG/CCG repeats

484. Allergic rhinits is mediated by:
a) IgA
b) IgG
c) IgM
d) IgD
e) IgE

485. The drug of choice for primary rapidly progressive coccidioidomycosis:
a) Prednisone
b) Acyclovir
c) Amphotericin B
d) Foscarnet
e) Trimethoprim–sulfamethoxazole

486. A hand, foot, and mouth syndrome is most commonly due to:
  a) Coxsackievirus A16
  b) Echovirus 6
  c) Coxsackievirus B5
  d) Enterovirus 70
  e) Coxsackievirus A2

487. Most common cause of fever in an infant younger than 3 months of age:
  a) Group B Streptococcus
  b) Group A Streptococcus
  c) E. coli
  d) Viral infection
  e) Listeria

488. A foramen ovale usually closes by:
  a) 1 month
  b) 2 months
  c) 3 months
  d) 4 months
  e) 6 months

489. A common renal manifestation of sickle cell anemia:
  a) Hematuria
  b) Kidney infection
  c) Polycystic kidney
  d) Multicystic kidney
  e) Renal artery stenosis

490. Live measles vaccine should not be given in a patient with the following conditions except:
  a) Malignancy
  b) Organ transplantation
  c) Active tuberculosis
  d) AIDS
  e) Family member has AIDS

491. Most common cause of primary hyperparathyroidism in children:
  a) Metastasis
  b) Maternal hyperparathyroidism
  c) Maternal hypocalcemia
  d) Parathyroid gland adenoma
  e) Parathyroid gland hyperplasia

492. The risk to offspring if father has a diabetes:
  a) 2%
  b) 4%
  c) 6%
  d) 25%
  e) 50%

493. Elevated hemoglobin A2 is associated with:
  a) Renal failure
  b) Wilson disease
  c) Adrenal failure
  d) Thalassemia
  e) Sickle cell disease

494. A female child appeared in the ER with history of first episode of a generalized convulsion that lasted for 1 to 2 minutes. She has no fever. Mother denies family history of seizure. Physical examination reveals a postictal state but otherwise normal. EEG result is normal. SMA 6 plus calcium and magnesium are normal. The next step in management:
a) Start Carbamezepine
b) Start phenytoin
c) No anticonvulsant is needed but a close follow-up is indicated
d) Head CT scan
e) Head MRI

495. A mother delivered a twin newborn by NSVD. Apgar scores of twin ‘B’ are lower than that of twin ‘A’. Most likely cause of low Apgar scores in twin ‘B’:
a) Early placental separation
b) Twin ‘B’ is smaller than twin ‘A’
c) Twin ‘B’ is larger than twin ‘A’
d) Twin ‘B’ is anemic.
e) Twin ‘B’ is polycythemic

496. The growth factor for newborns:
a) Sodium
b) Calcium
c) Phosphorus
d) Potassium
e) Magnesium

497. The growth factor for a fetus:
a) Insulin
b) Glucagon
c) Thyroid hormones
d) Corticosteroids
e) ACTH

498. Human milk and cow’s milk are similar:
a) Carbohydrate
b) Protein
c) Fat
d) Vitamin K
e) Calories

499. All of the following statements are true about breast feeding except:
a) Erythroblastosis fetalis is a contraindication to breast feeding.
b) Breast feeding should begin as soon as possible.
c) Mother who does not want or unable to nurse her infant should not have less sense of accomplishment or affection to her child.
d) Presence of rubella virus in breast milk is not a contraindication of breast-feeding.
e) The low vitamin K content of breast milk may cause hemorrhagic disease of the newborn.

500. A 3-year-old boy developed clumpsiness and awkward features during walking. He has difficulties in participating games. He is developmentally delayed for his age. He was born LGA (large for gestational age). At birth, the height, weight, and head circumferance were above 95 the percentile. Head CT scan revealed dilated ventricles and EEG was abnormal. Most likely diagnosis:
a) Brain tumor
b) Sotos syndrome
c) Ataxia-telangiectasia
d) Fragile X syndrome
e) Duchenne muscular dystrophy

501. A 9-year-old girl appears in a clinic for a routine check up. Physical examination reveals enlarged breasts, pubic hairs, and axillary hairs. Most likely diagnosis:
a) Ovarian tumor
b) Normal
c) Pituitary tumor
d) Adrenal tumor
e) Posterior fossa tumor

502. A 16-year-old girl appears in the ER with history of fever (103°F), nausea, vomiting, and pain in the right upper quadrant that radiates to the right shoulder. She denied sexual activities but she had a past history of Chlamydia trachomatis vaginal infection. Physical examination revealed enlarged (3 cm) and tender liver. Liver function test results reveal SGPT (150 U/L), bilirubin 0.9 mg/dL, alkaline phosphatase 70 U/L, and SGOT (140 U/L). Serum anylase level is 37 U/L. CBC result reveals WBC count 17,600/Cu mm, polymorphs 82%, and lymphocytes 18%. Abdominal X-ray is normal. Most likely diagnosis:
a) Fitz-Hugh-Curtis syndrome
b) Cholestatic jaundice
c) Hepatitis A infection
d) Pancreatitis
e) Chlamydia causing pelvic inflammatory disease

503. A 3–year-old girl appears in a clinic for routine check up. Physical examination reveals that both tympanic membranes are immobile and retracted. She has conductive hearing loss. Most likely cause:
a) Aminoglycoside
b) CMV
c) Herpes
d) Rubella
e) Recurrent URI

504. A full-term newborn is diagnosed to have an upper intestinal obstruction. Most common clinical manifestation:
a) Bilious vomiting
b) Abdominal distension
c) Bloody stool
d) Hematemesis
e) Jaundice

505. A full-term SGA (small for gestional age) male newborn was admitted to NICU. Head CT scan revealed diffuse calcifications in the brain. Most likely diagnosis:
a) CMV
b) Rubella
c) Craniopharyngioma
d) Toxoplasmosis
e) Herpes

506. A 9-month-old girl recently arrived in USA. She has been drinking goat’s milk. Most likely complication:
a) Tuberculosis
b) E. coli
c) Folic acid deficiency
d) Hypokalemia
e) Hypernatremia

507. A 4-year-old boy is diagnosed to have an acute appendicitis. The surgeon should:
a) Talk to parents only.
b) Not say anything to the patient.
c) Whisper to parents
d) Discuss in front of all concerned family members.

e) Talk to the patient and his parents.

508. A full-term female was born by NSVD. Her mother is diagnosed to have a Chlamydia trachomatis infection but she refused treatment. The next step in management:
a) Start oral erythromycin
b) No therapy is indicated
c) Use erythromycin eye ointment
d) Use erythromycin eye drop
e) Start oral azithromycin

509. A pregnant mother had lost a 3-year-old boy with Tay-Sachs disease. She is worried about this pregnancy. Prenatal diagnosis can be made in first trimester by:
a) Amniocentesis
b) Chorionic villous sampling
c) Ultrasonography
d) Leukocyte hexosaminidase A
e) Serum hexosaminidase A determination

510. A Gram-positive bacteria causing SIRS (systemic inflammatory response syndrome) is due to:
a) Endotoxin
b) Exotoxin
c) Leukotrienes
d) Prostaglandins
e) Lipoteichoic acid-peptidoglycan complex

511. A 24-week-gestational age preterm female with RDS (respiratory distress syndrome) required P-RBC (packed-red blood cells) transfusions. Most likely cause of anemia:
a) IVH
b) Sepsis
c) Anemia of prematurity
d) Bone marrow hypoplasia
e) Frequent withdrawal of blood samples

512. Physicians responsibilities in sports includes all of the following except:
a) Tell parents to allow maximum physical activities.
b) Avoid unnecessary restrictions to prevent injuries.
c) Provide health care services.
d) Allowed alternative sports.
e) Imposed restrictions when absolutely necessary.

513. A boy reaches peak height velocity between years:
a) 12 – 13,
b) 13 – 14
c) 14 – 15
d) 15 – 16
e) 16 – 17

514. A boy has been receiving oral corticosteroids for a long period of time for ulcerative colitis. Side-effects of steroid includes all of the following except:
a) Adrenal suppression
b) Cataracts
c) Diabetes mellitus
d) Increased immunity
e) Aseptic necrosis of femoral head

515. External male genital organs are formed by:
a) Testosterone

- b) Estrogen
- c) Dehydrotestosterone
- d) Progesterone
- e) Prolactin

516. Procoagulant factors include all of the following:
- a) I, VI, IX, X
- b) IV, IX, X, XII
- c) II, VI, IX, XI
- d) III, VII, IX, X
- e) II, VII, IX, X

517. The most common associated anomaly in meningomyelocele:
- a) Omphalocele
- b) Hydrocephalus
- c) Polycystic kidney
- d) Anencephaly
- e) Microcephaly

518. The most common site of spinal cord injury in a breech presentation:
- a) C5 – C6
- b) C6 – C7
- c) C7 – T1
- d) T1 – T2
- e) T2 – T3

519. Preferred therapy for exercise-induced asthma:
- a) Inhaled albuterol
- b) Oral theophylline
- c) Oral montelukast
- d) Inhaled salmeterol
- e) Inhaled cromolyn

520. Most common organism causing infantile diarrhea:
- a) Shigella flexneri
- b) Salmonella typhimurium
- c) E. coli
- d) Rotavirus
- e) Campylobacter fetus

521. A 15-year-old girl appears with a vaginal discharge that is white, homogenous, and has a fishy odor. She had similar presentations at least 3 times in the past 3 months. She was treated adequately each time with oral metronidazole. Most likely cause:
- a) Foreign body
- b) Chlamydia
- c) Group B Streptococcus
- d) Syphilis
- e) Gonorrhea

522. A 5-year-old boy has a cystic fibrosis with gastroesophageal reflux. The treatment for reflux includes all of the following except:
- a) Omeprazole
- b) Diet
- c) Fundoplication
- d) Upright position
- e) Supine position

523. The factor responsible for forming testes:
   - a) Testosterone
   - b) Estrogen
   - c) X chromosome
   - d) Progesterone
   - e) Testicular determining factor (TDF)

524. A full-term, LGA male was born by a cesarean section due to fetal distress. Apgar scores were 8 and 9 at 1 and 5 minutes respectively. His mother had diabetes during this pregnancy. Most common cardiac anomaly:
   - a) VSD
   - b) ASD
   - c) Cardiac failure
   - d) Cardiomegaly
   - e) Asymmetric septal hypertrophy

525. A 6-month-old girl appears in the ER with the signs and symptoms of a right ventriculoperitoneal shunt obstruction. The shunt was placed 6 weeks ago. The least likely clinical manifestation:
   - a) Lethargy
   - b) Vomiting
   - c) Fever
   - d) Increased head circumferance
   - e) Shunt remains depressed even after releasing pressure

526. All of the following statements are true about scabies except:
   - a) Permethrin 5% cream is slightly more effective and less toxic than that of lindane.
   - b) Persistent pruritus after treatment suggests inadequate therapy.
   - c) All family members should be treated at the same time to prevent reinfestation.
   - d) Bedding and clothing worn next to the skin during the 4 days before initiation of therapy should be laundered.
   - e) Oral antihistamines and topical corticosteroids can relieve itching.

527. A newborn is diagnosed with congenital rubella. The most common clinical presentation:
   - a) Intrauterine growth retardation
   - b) Cataract
   - c) Microopthalmia
   - d) Sensorineural hearing loss
   - e) ‘Blueberry-muffin’ skin lesion

528. A newborn physical examination revealed penile torsion with a rotation up to 55 degrees from midline. The next step in management:
   - a) Surgical consult
   - b) Unrotate the torsion immediately
   - c) Observation
   - d) Renal sonogram
   - e) First unrotate the penis and fix it with the scrotum

529. A 6-month-old girl needs a P-RBC transfusion for anemia. Her blood type is B(+). She should receive the following blood type:
   - a) A(+)
   - b) A(–)
   - c) O(+)
   - d) B(–)
   - e) AB(+)

530. A 8-year-old boy has been taking digoxin for the last 3 months. He appears in the ER with history of vomiting, diarrhea, diplopia, yellow or green vision, and photophobia for the last 12 hours. Physical examination reveals

bradycardia and dry mucous membranes. EKG reveals prolonged P – R intervals. The next step in management:
a) Intravenous hydration
b) Oral hydration
c) Stop digoxin and give digoxin-specific Fab antibodies
d) Opthalmology consult
e) Increase the digoxin dose

531. All of the following statements regarding transmission of hepatitis are true except:
a) A newborn may be affected by hepatitis B when mother is positive for hepatitis B surface antigen.
b) A newborn usually develops hepatitis B infection when mother is positive for hepatitis B surface antigen and she is breast feeding to the baby.
c) Blood transfusion may transmit hepatitis B and hepatitis C, if the blood is not properly screened.
d) Immune serum globulin may transmit hepatitis B, hepatitis C, and hepatitis A.
e) Both hepatitis A and hepatitis B are sexually transmitted.

532. The serum alpha feto protein level is elevated in all of the following conditions except:
a) Anencephaly
b) Omphalocele
c) Meningomyelocele
d) Congenital nephrosis
e) Aneuploidy

533. A full-term, healthy newborn boy is delivered. Mother wanted to give breast feeding to the baby. When both of them are healthy, the time to start breast feeding in hours:
a) 0 – 2
b) 2 – 3
c) 3 – 4
d) 4 – 5
e) 5 – 6

534. A male child appears in the ER with fever (102°F), pain and swelling of the right knee for the last 36 hours. Mother denies history of trauma. He had history of a throat infection 2 weeks ago. Physical examination reveals swollen and tender right knee. The preferred diagnostic test:
a) Blood culture
b) Ultrasonography of knee joint
c) MRI of knee joint
d) Throat culture
e) Joint fluid analysis

535. A 10-year-old boy appears in the ER with a history of pain and difficulty in vision in the left eye for the last 24 hours. He denies history of trauma. A careful ophthalmologic examination can detect all of the following except:
a) Papilledema
b) Optic atrophy
c) Retinal hemorrhage
d) Retinal detachment
e) Retrobulbar neuritis

536. Most common complication of a tympanostomy tube:
a) Hearing loss
b) Otorrhea
c) Cholesteatoma
d) Otitis media
e) Otitis externa

537. A 10-year-old boy appeared in a clinic with history of skin lesions for the last 12 hours. Mother stated that the boy went for swimming in a public pool 1 day prior to this rash. Physical examination reveals erythematous, macular, papular, and pustular rashes over the trunk. Most likely organism:
a) S. aureus
b) S. epidermidis
c) Pseudomonas
d) Klebsiella
e) Serratia

538. A 6-year-old boy appeared in the ER with periorbital and peripheral pitting edemas for the last 24 hours. His urine output was diminished. He had no fever. Physical examination revealed temperature (99°F), heart rate 105 per minute, blood pressure 88/54, bilateral pitting and periorbital edemas. Urinalysis revealed proteinuria 3+ and RBCs 1+; 24-hour urine revealed proteinuria more than 2g. The serum had a low albumin, calcium, and creatinine clearance; a high cholesterol and triglyceride. The serum C3 level is normal. The next step in management:
a) Renal biopsy
b) Prednisone therapy
c) Fluid restriction
d) Cyclophosphamide therapy
e) Chlorthiazide therapy

539. All of the following tumors cause a diarrhea except:
a) Neuroblastoma
b) Ganglioneuroma
c) VIPoma
d) Pheochromocytoma
e) Gastrinoma

540. Most common site of an ectopic pregnancy:
a) Fallopian tube
b) Peritoneum
c) Abdominal cavity
d) Ovary
e) Pelvic cavity

541. A pregnant mother is admitted in the labor floor. Ultrasonography reveals estimated fetal weight is 3.5 kg, decreased amniotic fluid volume, but normal biophysical profile. The amniotic membrane was ruptured and the fluid was stained with thick meconium. The cervix is 2 cm dilated. The next step in the management:
a) Immediate cesarean section
b) Induce vaginal delivery
c) Start tocolysis with $MgSO_4$
d) Amnioinfusion and fetal monitoring
e) Observation

542. A 9-year-old boy was admitted to PICU for a severe asthma attack. He was receiving aminophylline continuous infusion. The serum theophylline level was normal. The least likely mechanism of action of theophylline:
a) Diuretic effect
b) Stimulates diaphragmatic muscles
c) Increases endogenous catecholamines in circulation
d) Relaxes bronchial smooth muscles
e) Inhibitory effect on cyclic AMP

543. A child was referred for an ophthalmologic evaluation that revealed Kayser-Fleischer ring in both eyes. Most likely diagnosis:
a) Down syndrome
b) Wilson disease

c) Marfan syndrome
d) Homocysteinuria
e) Congenital rubella

544. Most potent antiinflammatory steroid:
a) Prednisone
b) Fluorohydrocortisone
c) Prednisolone
d) Hydrocortisone
e) Betamethasone

545. Pulmonary function test results in a patient with cystic fibrosis:
a) Restrictive lung disease
b) Obstructive lung disease
c) Initially restrictive, then obstructive lung disease
d) Initially obstructive, then restrictive lung disease
e) Normal lung function

546. A 28-week-gestational age preterm newborn with RDS (respiratory distress syndrome) was placed on a mechanical ventilator. Umbilical arterial and umbilical venous catheters were placed. Three hours later, physical examination revealed blanching of the right foot. The next step in the management:
a) Warm up the left foot
b) Warm up the right foot
c) Remove umbilical venous catheter
d) Remove umbilical arterial catheter
e) Infuse tolazoline

547. A child had a positive blood culture. After the positive result, the spinal tap was performed. 24 hours later, the child developed meningitis. The least likely cause of meningitis:
a) Bacteria spreads from blood to meninges
b) Bacterial spreads from sinuses
c) Bacterial spreads from otitis media
d) Bacterial spreads from nasopharynx
e) Inoculation of bacteria by the spinal puncture

548. A 14-year-old boy appears in the ER with history of pain, swelling, and redness in the left thigh for the last 3 weeks. He had history of a trauma 3 weeks ago during soccer game. The swelling and redness progressively worsened for the last 3 weeks. Physical examination revealed tenderness, swelling, and redness over the distal thigh. The left knee and the left hip have the full range of motion. X-ray revealed soft tissue swelling but normal bones. Most likely diagnosis:
a) Osteosarcoma
b) Osteoclastoma
c) Ewing sarcoma
d) Rhabdomyosarcoma
e) Neurofibrosarcoma

549. A pregnant mother received propranolol before she delivered a newborn. The diagnostic investigation should include:
a) ECG
b) Serum calcium
c) Serum glucose
d) Serum potassium
e) Serum sodium

550. A 26-week-gestational age newborn was placed on a mechanical ventilator for RDS. Mother wants to hold the baby. The mother is advised:

a) To wait until the infant is extubated.
b) To wait until the infant is 2 Kg.
c) To hold the baby now.
d) To watch the baby from outside window.
e) To touch the baby but not to hold.

551. The treatment of choice for a myoclonic seizure:
a) ACTH
b) Phenobarbital
c) Phenytoin
d) Carbamazepine
e) Sodium valproate

552. A pregnant mother received captopril for hypertension. She delivered a full-term newborn. Most likely complication:
a) Liver failure
b) Renal failure
c) Hypoglycemia
d) Microcephaly
e) Cardiac failure

553. A 17-year-old boy has been doing strenuous exercise. The additional protein is indicated per day:
a) 5 to 24 gm
b) 25 to 45 gm
c) 46 to 65 gm
d) 66 to 85 gm
e) 86 to 105 gm

554. A child usually begins to play contact sports (age in years):
a) 6
b) 8
c) 10
d) 12
e) 14

555. The peak height velocity of a girl occurs in SMR (sex maturity rating):
a) 1
b) 2
c) 3
d) 4
e) 5

556. A 14-year-old boy is diagnosed with epilepsy. He should not participate in the following sport:
a) Tennis
b) Bicycle
c) Swimming
d) Golf
e) Gymnastic

557. The hypertension is a characteristic feature of:
a) 21-hydroxylase deficiency
b) Carboxylase deficiency
c) 11 beta-hydroxylase deficiency
d) Beta glucosidase deficiency
e) 3 beta-hydroxysteroid dehydrogenase defect

558. All of the following statements are true about the pedestrian injury except:
a) Pedestrian injuries are less in a marked croswalk.
b) Education of children in pedestrian safety is useful.
c) It is the most common cause of traumatic death between 5 and 9 years.
d) Lower extremity fracture is more common.
e) Slowing speed of trafic is important in prevention of a pedestrian injury.

559. A 11-year-old girl is diagnosed to have a constitutionally tall stature. The most important parameter that decides the final height:
a) Her present height
b) Her father's height
c) Her mother's height
d) Growth hormone levels
e) Bone age

560. A 8-year-old boy appears in the ER with history of fever (102.4°F), vomiting, crampy abdominal pain, and diarrhea with mucous and blood for the last 12 hours. He is being treated with amoxicillin for a otitis media. Most likely cause:
a) Allergic reaction to amoxicillin
b) Complication of otitis media
c) Acute appendicitis
d) Ulcerative colitis
e) Clostridium difficile infection

561. Most common organism responsible for acute otitis media:
a) H. influenzae
b) S. pneumoniae
c) M. catarrhalis
d) S. aureus
e) Pseudomonas aerugionosa

562. A full-term newborn male was intubated in the delivery room. Apgar scores were 2, 5, 7 at 1, 5, and 10 minutes respectively. He was brought to NICU and was placed on a mechanical ventilator. Physical examination revealed grade 2-3/6 systolic murmur in lower sternal border and equal air entry in both lungs. Chest X-ray revealed mild cardiomegaly. EKG revealed S-T and T-wave changes. Reexamination at 12 hours of age revealed louder murmur and progressive deterioration of his clinical condition. The ventilator settings were adjusted accordingly. After 24 hours of age clinical condition improved and heart murmur disappeared. Most likely diagnosis:
a) Meconium aspiration
b) VSD
c) Mitral valve regurgitation
d) Tricuspid valve regurgitation
e) PDA

563. A 4-month-old male infant was receiving Similac with iron. He developed diarrhea. The formula was changed to soy-based formula. Then, he developed rashes and vomiting. Most likely diagnosis:
a) Pyloric stenosis
b) Viral gastritis
c) Upper intestinal obstruction
d) Gastroesophageal reflux
e) Soy protein allergy

564. A 6-month-old girl appeared in a clinic for vomiting and developmental delay. The girl was asymptomatic at birth. She has poor head control. Mother noticed mousy odor in her diaper. Physical examination revealed fair skin, blond hair, and eczematous skin lesions. Most likely diagnosis:
a) Phenylketonuria (PKU)

b) Pompe disease
c) Tay-Sachs disease
d) Maple syrup urine disease
e) Alcaptonuria

565. A routine arterial blood gas test results of a 2-week-old premature, low birth weight male infant revealed base deficit – 12 mEq/L. He was asymptomatic but was not gaining weight adequately for the last few days. In a room air, ABG revealed pH 7.23 / $PCO_2$ 39 / $PO_2$ 75 / base deficit –12.0. The anion gap was increased. Most likely diagnosis:
a) Necrotizing enterocolitis
b) Systemic infection
c) Intraventricular hemorrhage
d) Anemia of prematurity
e) Late metabolic acidosis

566. A 16-year-old boy had a left orchiopexy surgery that was performed 5 years ago. The true statement:
a) Left testis will remain cancer free rest of his life.
b) Left testis can turn into malignancy.
c) Surgical correction prevents malignancy.
d) Right testis will remain cancer free rest of his life.
e) Follow-up every 3 months to rule out malignancy.

567. A 4-year-old boy was diagnosed with a bacterial meningitis. The therapy was completed. The boy is ready to go home. The next step in management:
a) Vision test
b) Audiologic evaluation
c) Renal function test
d) EKG
e) Liver function test

568. A patient with Alport syndrome should be evaluated for:
a) Cardiac anomaly
b) Renal anomaly
c) Vision test
d) Hearing test
e) Gonadal failure

569. A 6-year-old boy had a modified Blalock-Tausig shunt for tetralogy of Fallot. About 12 hours after surgery, the boy developed respiratory distress. Chest X-ray revealed pleural effusion. Most likely diagnosis:
a) Hemothorax
b) Chylothorax
c) Pneuthorax
d) Hydrothorax
e) Diaphragmatic hernia

570. A child appeared with a waddling gait and short stature. Physical examination revealed bilateral bowing of lower extremities. Laboratory test results revealed reduced serum calcium, phosphorus, and 1, 25 $(OH)_2$ D; elevated alkaline phosphatase; normal PTH. X-ray of the long bone revealed widening, fraying, and cupping of metaphysis. Most likely diagnosis:
a) Vitamin D-dependent rickets
b) Hepatic rickets
c) Hypophosphatemic bone disease
d) Primary chondrodystrophy
e) Familial hypophosphatemia

571. A 7-day-old female infant appeared in a clinic for routine check up. Mother stated that her daughter was not drinking enough through breast feeding. Her present weight is 3.2 Kg. Her birth weight was 3.4 Kg. Physical examination was unremarkable. The next step in the management:
 a) Start IV hydration
 b) Stop breast feeding
 c) Start bottle feeding
 d) Give high caloric formula
 e) Reassurance and continue breast feeding.

572. A 6-week-old preterm infant appeared with apnea, lethargy, poor feeding, and poor weight gain. Physical examination revealed pallor, tachypnea, and tachycardia. CBC test results revealed low hemoglobin, low hematocrit, normal MCV, normal peripheral smear, and high reticulocytes count. Most likely diagnosis:
 a) Infection
 b) Apnea of prematurity
 c) Anemia of prematurity
 d) Iron deficiency anemia
 e) ‘ABO’ hemolytic anemia

573. A 5-week-old female infant appears with a tremor and irritability. Serum calcium level is 6.4 mg/dL and serum phosphate level is 10.5 mg/dL. Serum SMA 6 results are normal. Chest X-ray reveals normal thymic shadow. Most likely cause:
 a) Di George syndrome
 b) Cow’s milk
 c) Infant of diabetic mother
 d) Low birth weight infant
 e) Idiopathic hypoparathyroidism

574. The true statement about maternal hygiene and breast feeding:
 a) Nipple area should be kept dry.
 b) Breasts should be washed before each feeding.
 c) Boric acid is used to clean the breasts.
 d) Use a tight brassiere.
 e) Mother should not worried about infection because it is localized.

575. All of the following factors that reduce intracranial pressure (ICP) except:
 a) Mannitol
 b) High $PCO_2$
 c) Furosemide
 d) Corticosteroids
 e) Morphine

576. Most common cause of acquired hypothyroidism with or without goiter:
 a) Thyroid cancer
 b) Iodine deficiency
 c) Surgical removal of thyroid
 d) Medullary endocrine neoplasia
 e) Hashimoto thyroiditis (lymphocytic thyroiditis; autoimmune thyroiditis)

577. All of the following statements are true about familial adenomatous polyposis coli (APC) except:
 a) X-linked dominant
 b) Can turn into a cancer
 c) Large intestine is most commonly involved.
 d) Pancolectomy is indicated
 e) A child with family history of APC and positive gene test should be followed with colonoscopy every 6-12 months until surgery is performed.

578. A full-term male infant is delivered by an emergency cesarean section for a fetal distress. At birth, the boy is limp, cyanotic, and has no respiratory effort. He is dried, suctioned, and stimulated. However, no clinical improvement is noted. His Apgar score is 1 for heart rate 60/minute. The next step in the management:
a) Chest compression
b) Intubation STAT
c) Free-flow oxygen at a rate of 10 L/minute
d) Vigorous stimulation
e) Bag-and-mask ventilation with a rate of at least 10 L/minute.

579. A 6-year-old girl appears in the ER with an injury. She has a pucture wound with a dirty nail in her left foot. She received DTaP vaccination at 2m, 4m, 6m, and 15m of age. The next step in vaccination:
a) No vaccination
b) Give DT (pediatric strength)
c) Give DT (adult strength)
d) Give DTaP
e) Give DTP

580. A 12-year-old boy is diagnosed with an intestinal obstruction. He is due for a surgical repair. He has been suffering from severe asthma attacks for the last 2 years. His asthma is usually controlled with a daily intake of oral prednisone and inhaled albuterol. The management to control his asthma prior to surgery should include:
a) 100% oxygen by mask
b) Albuterol inhalation
c) Inhaled corticosteroids
d) Intravenous corticosteroids
e) Measure serum cortisol level

581. A 3-year-old girl appears with a bilateral inguinal hernia. The girl may have an associated condition such as:
a) Ectopic ovary
b) Enlarged lymph nodes
c) Femoral hernia
d) Turner syndrome
e) Testicular feminization syndrome

582. Most common organism causing external otitis:
a) S. aureus
b) S. epidermidis
c) Candida albicans
d) Proteus mirabilis
e) Pseudomonas aeruginosa

583. A 1-day-old newborn appears with hypoglycemia. Physical examination reveals micropenis (1 cm). Most likely diagnosis:
a) Hyperpituitarism
b) Hypopituitarism
c) Hypoadrenalism
d) Hypogonadism
e) Hypothyroidism

584. A 10-year-old girl appears with a history of yellowish vaginal stain in her underpants for the last 3 months. Her mother is concerned. She said that her daughter’s menstrual period has not started yet. Most likely diagnosis:
a) Monilial infection
b) Candida infection
c) Physiologic vaginal discharge
d) Trichomonas infection
e) Gonococcal infection

585. A full-term girl was born by vaginal delivery with an assisted forcep. Physical examination reveals a right facial asymmetry particularly when the infant cries. She has a normal nasolabial folds, normal eye muscles, and no difficulty in drinking milk. Most likely diagnosis:
a) Right facial nerve palsy
b) Normal
c) Left cerebral infarction
d) Right cerebral infarction
e) Congenital absence of depressor angularis oris muscle.

586. A long-term use of this medication can cause lupus-like effect:
a) Nitroprusside
b) Prostaglandin
c) Nitroglycerin
d) Hydralazine
e) Prednisone

587. The use of this medication in a newborn may cause hypertrophic pyloric stenosis:
a) Amoxicillin
b) Erythromycin
c) Digoxin
d) Phenytoin
e) Cyclophosphamide

588. A full-term newborn can develop apnea due to use of the following medication:
a) Prostaglandin
b) Theophylline
c) Vancomycin
d) Vincristine
e) Cefotaxime

589. Most potent anti-inflammatory drug for treatment of allergy:
a) Antihistamine
b) Ibuprofen
c) Corticosteroid
d) Acetaminophen
e) A & D ointment

590. All of the following statements are true about counseling a seizure patient except:
a) Child should be watched closely and should have some restrictions in life.
b) Parents should learn first aid measures for handling seizures.
c) Gymnastic activities are not allowed.
d) Child should be watched when swimming.
e) Most parents and children readily adopt a long-term treatment plan.

591. A pregnant mother came for a routine follow-up in a genetic clinic. She has a 4-year-old girl who was born with a cleft lip and cleft palate. She wants to know the risk of recurrence of cleft lip and palate:
a) 1%
b) 2%
c) 4%
d) 9%
e) 25%

592. A child is diagnosed to have a pleural effusion. All of the following are the characteristics of a transudative pleural fluid except:
a) Total protein is less than 3 g/dL.

- b) Lactate dehydrogenase level is low.
- c) Total WBC count is less than 2000/mm$^3$
- d) Predominance of monocytes
- e) A ratio of pleural protein to serum protein is more than 0.5

593. The least common organism causing occult bacteremia in a 2-year-old:
- a) S. pneumoniae
- b) Shigella
- c) Salmonella
- d) H. influenza type b
- e) N. meningitidis

594. All organs are big in a LGA (large for gestational age) newborn except:
- a) Brain
- b) Liver
- c) Spleen
- d) Heart
- e) Kidneys

595. All organs are small in an asymmetric SGA (small for gestational age) newborn except:
- a) Brain
- b) Liver
- c) Spleen
- d) Heart
- e) Kidneys

596. This child should be referred for an auditory evaluation:
- a) A 3-month-old child startles at a loud sound.
- b) A 6-month-old child localizes to sound presented in a horizontal plane.
- c) A 15-month-old child points toward an unexpected sound or persons or to familiar objects when asked.
- d) A 18-month-old child is able to follow simple directions only with gestural or visual cues.
- e) A 22-month-old child points to body parts when asked.

597. The complication of a blistering sunburn in a child:
- a) Squamous cell cancer
- b) Malignant melanoma
- c) Basal cell cancer
- d) Keloid formation
- e) Candida infection

598. A 3-year-old boy accidentally drank alcohol that was left on the table by his father. The boy developed convulsion. Most likely cause of convulsion:
- a) Ethyl alcohol poisoning
- b) Methyl alcohol poisoning
- c) Hypoglycemia
- d) Hypocalcemia
- e) CNS stimulation by alcohol

599. A child's hematologic test results reveal a hemoglobin 9 g/dL, hematocrit 27, MCV 57, hemoglobin A 90%, hemoglobin A2 5%, and hemoglobin F 5%. Blood smear reveals poikilocyte, ovalocyte, basophilic stippling, and a few target cells. Most likely diagnosis:
- a) Normal
- b) Sickle cell disease
- c) Thalassemia minor
- d) Iron deficiency anemia
- e) Thalassemia major

600. A child's ABG (arterial blood gas) test result reveals a pH 7.35, $PCO_2$ 60, $PO_2$ 90, and bicarbonate 35. Most likely condition:
   a) Respiratory acidosis
   b) Normal
   c) Respiratory alkalosis
   d) Metabolic alkalosis
   e) Compensated respiratory acidosis

601. A female child has a history of severe anaphylactic reaction to penicillin. The true statement about giving vaccination to her:
   a) Do not give IPV
   b) Do not give MMR
   c) Give only IPV, do not give MMR
   d) Give only MMR, do not give IPV
   e) Give MMR and IPV; do not give other vaccinations.
   f) Can give IPV, MMR, and other vaccinations.

602. A 14-year-old boy is diagnosed with a cancer. He has a severe pain. The preferred therapy for a severe pain:
   a) Reassurance only
   b) Acetaminophen
   c) Ibuprofen
   d) Morphine
   e) Methadone

603. Most common indication of cardiac transplantation:
   a) Hypoplastic left heart syndrome
   b) Cardiomyopathies
   c) Multiple cardiac tumors
   d) Tricuspid atresia
   e) Single ventricle

604. A 1-day-old male newborn developed generalized convulsion due to a perinatal asphyxia. The preferred therapy for neonatal seizures:
   a) Lidocaine
   b) Phenytoin
   c) Paraldehyde
   d) Phenobarbital
   e) Lorazepam

605. The drug of choice for a status epilepticus in children:
   a) Phenobarbital
   b) Lorazepam
   c) Phenytoin
   d) Paraldehyde
   e) Carbamazepine

606. The earliest prenatal diagnosis of a congenital adrenal hyperplasia:
   a) Elevated 17-hydroxy progesterone level in a maternal blood.
   b) Ultrasonography by an expert.
   c) Elevated 17-hydroxy progesterone level in amniotic fluid.
   d) HLA typing and DNA analysis in amniotic fluid cells.
   e) HLA typing and DNA analysis of chorionic villi biopsy specimen.

607. A 4-year-old boy appears in the ER with a history of coughing, choking, and refuses to eat solid food. He drinks some juice in the ER. The boy has no fever. Most likely diagnosis:

a) Gastroesophageal reflux
b) Foreign body in trachea
c) Foreign body in esophagus
d) Foreign body in pharynx
e) Foreign body in bronchus

608. A 15-year-old girl appears in the ER with a history of peripheral loss of vision in both eyes since this morning. She denies any history of trauma. Her school performance has been deteriorating for the last 6 months. She denies headache, nausea, and vomiting. Her menstrual periods are irregular. She missed her last menstrual period. Physical examination reveals normal pupils, normal fundus, but a tunnel vision. The rest of the physical examination findings are normal. Most likely diagnosis:
a) Pregnancy
b) Brain tumor
c) Retinal hemorrhage
d) Retinal detachment
e) Hysterical vision loss

609. A 1-day-old female infant develops hypocalcemia. She has a mild tremor. She is admitted with a mild respiratory distress. Physical examination is unremarkable. The serum total calcium level is 6.6 mg/dL, ionized calcium level is 3.2 mg/dL, magnesium level is 2 mg/dL, and serum electrolytes are normal. Most likely cause of early hypocalcemia in a newborn:
a) Loss of calcium in urine
b) Transient hypoparathyroidism
c) Rickets
d) Hypopituitarism
e) Decreased calcium intake in formula

610. A 7-year-old boy appears in the ER with a history of head trauma. He is lethargic. He vomited twice in the ER. He had one episode of generalized convulsion for 1 minute duration. Mother denies history of seizure. The best diagnostic method for a recent head trauma:
a) Ultrasonography
b) MRI
c) Head CT scan
d) CSF examination
e) Observation and repeat neurological examination

611. A 15-year-old boy was referred to an endocrine clinic for a short stature. He has a history of vomiting and headache for the last 3 weeks especially in the morning. Headache improves after vomiting. Physical examination reveals temperature (98.6°F), pulse rate 80 per minute, respirator rate 20 per minute; height is less than 5 th percentile and weight is at 10 th percentile. Eye examination reveals a bitemporal visual defect. Skull X-ray reveals a calcification. Most likely diagnosis:
a) Craniopharyngioma
b) Ependymomas
c) Brain stem glioma
d) Teratoma
e) Medulloblastoma

612. A full term newborn male appears cyanotic at birth. He was intubated in the delivery room and received 100% oxygen. Maternal history of type I diabetes. The boy was placed on a mechanical ventilator with the setting of an IMV 40, PIP 20, PEEP 5, $FiO_2$ 100%, inspiratory time 0.5 second, and flow rate 10 L/minute. Oxygen saturation is 100%. Physical examination reveals plethora, heart rate is 190 per minute, respiratory rate is 80 per minute, blood pressure 58/30, grade 3/6 systolic ejection murmur in the mid-left sternal border, and liver is palpable 5 cm below the right costal margin. Chest X-ray reveals increased pulmonary congestion. EKG reveals increased anterior and posterior forces. CBC reveals WBC count 21,000, 60% polymorphs, 40% lymphocytes, platelet count 210,000, hemoglobin 21 g/dL and hematocrit 63. Most likely diagnosis:
a) VSD

b) ASD
c) Pulmonic stenosis
d) Diabetic cardiomyopathy
e) Aortic stenosis

613. A 28-week-gestation age preterm girl was on a mechanical ventilator. She received a Similac 24 calories formula through an orogastric tube. She developed apnea, bradycardia, and lethargy after the feeding. Physical examination reveals an abdominal distension and decreased intestinal sounds. Abdominal X-ray reveals a free air under the right diaphragm. The next step in the management:
a) Upper GI series
b) Laparotomy
c) Barium enema
d) Ultrasonography
e) Repeat abdominal X-ray after 4 hours

614. A 30-week-gestational age preterm male infant is ready to receive a Similac 22 calories formula through an orogastric tube. He develops vomiting and respiratory distress after the first feeding. A nurse passed an orogastric tube with some difficulties and could not pass beyond 10 cm. Most likely diagnosis:
a) Intestinal perforation
b) Tracheal perforation
c) Esophageal perforation
d) Gastroesophageal reflux
e) Pyloric stenosis

615. All of the following statements are true about discipline except:
a) In USA, many parents use spanking regularly to achieve desired discipline.
b) Physicians should guide and educate families and help them to become a successful parent and child.
c) Some forms of corporal punishment is allowed, because the outcome is good.
d) Physicians must be empathic, flexible, and motivated to work with families.
e) Parents should use the word ‘please’ even when they disagree with the child.

616. A child appears in the ER with a history of fever (103°F), vomiting, headache, lethargy, and a focal seizure. Mother denies any trauma. Physical examination reveals right hemiparesis and bilateral papilledema. CBC reveals WBC count is 21,000, polymorphs 75%, lymphocytes 20%, monocytes 5%, platelet 195,000. Head CT scan with contrast reveals a ring-enhancing lesion in the left cerebrum. Most likely diagnosis:
a) Arteriovenous malformation
b) Cerebral aneurysm
c) Brain tumor
d) Brain abscess
e) Meningitis

617. A 14-year-old girl is diagnosed with a lupus. The laboratory findings include all of the following except:
a) Gammaglobulin levels are decreased in serum.
b) Anti-Smith (sm) antibody is present in SLE but does not measure the disease activity.
c) Anti-DNA is more specific for lupus.
d) Antinuclear antibody (ANA) is not specific for lupus.
e) $CH_{50}$, C3, and C4 are decreased in an active disease

618. A 32-week-gestational age preterm male infant was diagnosed with a necrotizing enterocolitis and intestinal perforation. About 55 cm of the small intestinal (ileum) was removed. He developed short gut syndrome. Total parenteral nutrition (TPN) was started. He developed dry, thickened, and desquamated skin all over the body. The most likely cause:
a) Eczema
b) Vitamin deficiency
c) Zinc deficiency
d) Icthyosis

e) Lipid deficiency

619. First permanent teeth appears (in years):
a) 3 – 4
b) 4 – 5
c) 5 – 6
d) 6 – 7
e) 7 – 8

620. A full-term male newborn is diagnosed with a severe perinatal asphyxia. The usual arterial blood gas findings:
a) pH 7.30
b) $PaO_2$ 75
c) $PCO_2$ 30
d) Bicarbonate 18
e) Base deficit 20 or more

621. All of the following statements are true about nutritional requirements except:
a) Fat and cholesterol should be restricted to all children.
b) Full term infants water requirement is 70 – 150 mL/kg/day.
c) Preterm infants water requirement is 85 – 170 mL/kg/day.
d) Infants water content is 75 – 80% of body weight.
e) Infants daily consumption of fluid is 10 – 15% of body weight.

622. A 5-year-old girl appears in a clinic for a routine check up. Her mother had history of enuresis. The incidence of enuresis if one parent was enuretic:
a) 22%
b) 33%
c) 44%
d) 55%
e) 77%

623. A 14-year-old boy developed rhabdomyolysis due to a heavy exercise. In rhabdomyolysis, renal damage is most likely due to:
a) Hemoglobinuria
b) Tissue thromboplastin
c) Myoglobinuria
d) Haptoglobinuria
e) Idiopathic

624. Taste bud reduced or absent in which of the following condition:
a) Scarlet fever
b) Niacin deficiency
c) Diabetes
d) Pernicious anemia
e) Riley-Day syndrome

625. A 7-year-old boy appears in the ER with a broken teeth. His mother gave history of trauma. The boy refused to talk. The physician should rule out:
a) Autism
b) Psychiatric problems
c) Hearing loss
d) Child abuse
e) ADHD (attention deficit hyperactivity disorder)

626. In newborns, eye-fixation occurs in:
a) First day

b) Third day
c) Seventh day
d) One month
e) Six months

627. A 3-day-old female newborn is admitted to NICU for rule out sepsis. She is treated with ampicillin and gentamicin. She is drinking Similac 20 calorie formula 15 mL every three hours plus intravenous $D_{10}$ water, total 100 mL/kg/day. The serum electrolytes result reveals Na 125, K 3.6, Cl 96, glucose 80, BUN 8, and creatinine 0.8. Urine specific gravity is 1010. Most likely diagnosis:
a) Diabetes insipidus
b) Laboratory error
c) Increased ADH secretion
d) Pseudohyponatremia
e) Maintenance sodium chloride was not given

628. A 12-month-old boy is admitted with meningitis. The boy is treated with third generation cephalosporin. The boys is kept NPO and intravenous fluid is given. After 36 hours, the boy drinks 240 mL of orange juice at a time. About 2 hours later, the boy developed a generalized convulsion for 30 seconds. The serum electrolytes result reveals Na 122, K 4, Cl 92, glucose 76, BUN 4, and creatinine 0.4. Urine specific gravity is 1027. Urine output is 0.2 mL/kg/hour. Most likely diagnosis:
a) Increased ADH secretion
b) Diabetes insipidus
c) Pseudohyponatremia
d) Laboratory error
e) Hyponatremic dehydration

629. A premature newborn keeps his eyes closed until light is removed. This response is first noted at gestational age:
a) 25 weeks
b) 28 weeks
c) 29 weeks
d) 32 weeks
e) 37 weeks

630. In DiGeorge syndrome, the defect in the pharyngeal pouch:
a) 1st and 2nd
b) 2nd and 3rd
c) 3rd and 4th
d) 4th and 5th
e) 5th and 6th

631. The deficiency of an enzyme in Pompe’s disease (type II glycogenesis):
a) Acid alpha-glucosidase(Acid maltase)
b) Glucose 6 phosphatase
c) Muscle phosphorylase
d) Acid lapase
e) Beta-glucosidase

632. A HIV-infected severely immunocompromised child should receive all of the following vaccinations except:
a) DTaP
b) IPV
c) Influenza
d) MMR
e) Varicella

633. Disseminated gonococci and meningococci infections are due to deficiency of the following complements except:

- a) C2
- b) C5
- c) C6
- d) C7
- e) C8

634. A 10-month-old female child was admitted and treated with meningitis. She improved initially. A few days after the onset of antibiotic therapy, she developed recurrence of fever and vomiting. Physical examination revealed increased head circumferance, bulging fontanel, and separation of sutures. Transillumination revealed enhanced state of glowing. Most likely diagnosis:
   - a) Recurrence of meningitis
   - b) Subdural effusion
   - c) Subarachnoid hemorrhage
   - d) Intraventricular hemorrhage
   - e) Hydrocephalus

635. Most common cause of alopecia in a newborn:
   - a) Ectodermal dysplasia
   - b) Seborrheic infection in scalp
   - c) Toxic alopecia
   - d) Trichotillomania
   - e) Positional

636. The least likely cause of calcification:
   - a) Pheochromocytoma
   - b) Neuroblastoma
   - c) Retinoblastoma
   - d) Wilms tumor
   - e) Craniopharyngioma

637. The characteristic rash present in Lyme disease:
   - a) Erythema multiforme
   - b) Erythema infectiotum
   - c) Erythema toxicum
   - d) Erythema nodosum
   - e) Erythema migrans

638. Erythromycin is effective in all of the following organisms except:
   - a) Mycoplasma pneumoniae
   - b) Chlamydia trachomatis
   - c) E. coli
   - d) Legionella pneumophilia
   - e) Bordetella pertussis

639. In tick paralysis, the tick is present:
   - a) Lymph nodes
   - b) CSF
   - c) Blood
   - d) Muscle
   - e) Skin

640. A 10-day-old male newborn is diagnosed to have a cystic fibrosis. Sweat chloride test results are normal. The most likely interpretation:
   - a) He does not have a cystic fibrosis.
   - b) Sweat chloride test results are always abnormal in a cystic fibrosis newborn.
   - c) A sweat chloride test should not be performed before 1 year of age.

d) Sweat chloride test results are not reliable in first week of life.
e) Sweat chloride test should be performed after 6 months of age.

641. A true statement about the growth in diabetic patients:
a) Diabetes has no relation with the growth.
b) Diabetic patients are taller than their peers.
c) Diabetic patients are heavier than their peers.
d) Insulin is a growth hormone for children.
e) A well-controlled patient should have normal growth and development.

642. A child with a sickle cell disease should receive prophylactic therapy:
a) Rifampin
b) INH
c) Erythromycin
d) Penicillin
e) Zithromycin

643. The true statement about T4/T8 ratio:
a) Normal ratio is more than 1.0
b) In AIDS patient, ratio is always reversed.
c) A reversed ratio is an absolute sign of serious T cell deficiency.
d) In advanced AIDS patient, there is loss of nearly all T8 cells.
e) A reversed ratio should not be due to an error in handling specimen.

644. A 4-month-old male child appears in the ER with vomiting and abdominal distension for the last 10 hours. He was born premature and stayed in the hospital for 2 months. Physical examination reveals temperature (98.6°F), heart rate 120 per minute, respiratory rate 35 per minute, distended abdomen, and a right scrotal mass. The mass is not reducible and does not transilluminate well. The appropriate management:
a) Continue oral hydration therapy
b) Surgical repair
c) Perform barium enema
d) Start ampicillin and gentamicin
e) Perform upper GI series

645. A female child is admitted with H. influenzae type b meningitis. She recently arrived from another country. She is treated with cefotaxime and dexamethasone. Her temperature becomes normal after 24 hours of therapy. After 48 hours, dexamethasone is discontinued. She developed fever (101°F) again. Most likely cause and its management:
a) Recurrence of meningitis
b) Start ceftriaxone
c) Resume dexamethasone
d) Head CT scan to rule out subdural effusion
e) Reassurance

646. A male child is diagnosed with a streptococcal meningitis. He is treated with cefotaxime and vancomycin. About 24 hours after the onset of therapy, the boy developed a generalized convulsion for 1 minute duration. The preferred therapy for convulsion:
a) Carbamazepine
b) Phenobarbital
c) Initially lorazepam followed by phenytoin
d) Initially diazepam followed by phenobarbital
e) Paraldehyde

647. A 3-week-old male infant is diagnosed with hypertrophic pyloric stenosis. Ramstedt pyloromyotomy is performed. After the surgery, vomiting is stopped. Radiological study revealed narrowing of the pyloric canal. The next step in management:

- a) Repeat the surgical procedure
- b) Endoscopic balloon dilatation
- c) NPO and intravenous hydration
- d) Corticosteroids to reduce the edema
- e) Reassurance

648. Most common mode of transmission of HIV infections in children younger than 13 years:
- a) Heterosexual contacts
- b) Blood transfusions
- c) From HIV-infected household members
- d) Horizontal transmitted from HIV-infected mothers.
- e) Vertical transmission from HIV-infected mothers.

649. A male newborn had circumcision without anesthesia. All of the following hormones are elevated during a procedure without anesthesia except:
- a) Catecholamines
- b) Corticosteroids
- c) Growth hormone
- d) Insulin
- e) Glucagon

650. A 6-hour-old female newborn develops jaundice. Her mother is O(+). The infant is A(+) and Coombs (+). Initial serum bilirubin level is 12 mg/dL. The infant is placed under triple Phototherapy. At 24 hours of age, the serum bilirubin level rapidly went up to 28 mg/dL. The girl developed bilirubin encephalopathy. The double volume exchange transfusion was performed with a whole blood. The serum bilirubin level is 19 mg/dL after the exchange transfusion. She went home after 5 days. The serum bilirubin level was 12.5 before discharge. The late manifestations of kernicterus includes all of the following except:
- a) Blindness
- b) Dental dysplasia
- c) Seizures
- d) Motor disorders
- e) Choreoathetoid movements

651. The postoperative complication of total adrenal removal:
- a) Hypopigmentation
- b) Decreased ACTH
- c) Small pituitary mass
- d) Small pituitary fossa
- e) Nelson syndrome

652. Most common clinical manifestation of congenital toxoplasmosis:
- a) Chorioretinitis
- b) CNS calcification
- c) Thrombocytopenia
- d) Hepatosplenomegaly
- e) Asymptomatic

653. Most common clinical manifestation of CMV infection:
- a) Asymptomatic
- b) Periventricular calcification
- c) Chorioretinitis
- d) Thrombocytopenia
- e) Microcephaly

654. Folic acid supplementation in a pregnant mother reduces which of the following defect in fetus:
- a) Cardiac

b) Renal
c) CNS
d) Thyroid
e) Pulmonary

655. Mitral valve prolapse is found in all of the following conditions except:
a) Marfan syndrome
b) Down syndrome
c) Scoliosis
d) Pectus excavatum
e) Straight back syndrome

656. Long-term effect in a child with lead toxicity:
a) Psychiatric problem
b) Seizures
c) Brain atrophy
d) Osteoid osteoma
e) Learning difficulty

657. Most prevalent sexually transmitted disease (STD) in adolescents:
a) Chlamydia trachomatis infection
b) Human papilloma virus (HPV) infection
c) Treponema pallidum infection
d) Candida infection
e) Herpes infection

658. Most common sexually transmitted disease (STD) in adolescents:
a) Chlamydia infection
b) HPV infection
c) Syphilis
d) Candida infection
e) Herpes infection
659. CIE (counter immunoelectrophoresis) in CSF and urine can detect all of the following organisms except:
a) E. coli
b) Gonococci
c) Pneumococci
d) H. influenzae type b
e) Meningococci

660. A 8-year-old boy is receiving both regular and NPH insulin injections in morning and evening hours (8 A.M. and 8 P.M.) everyday. His early morning blood sugar levels are usually elevated (200 mg/dL). His noon time blood sugar level was 100 yesterday. The next step in the management:
a) Increase last P.M. dose of NPH
b) Decrease last P.M. dose of NPH
c) Decrease this A.M. dose of regular insulin
d) Increase this A.M. dose of NPH
e) Increase this A.M. dose of regular insulin

661. A 12-year-old girl is receiving both regular and NPH insulin injections in 8 A.M. and 8 P.M. everyday. His serum glucose level at 10 P.M. is 60 mg/dL (low). The serum glucose levels in other times are normal. The next step in the management:
a) Increase the P.M. dose of regular insulin.
b) Decrease the A.M. dose of NPH insulin.
c) Decrease the P.M. dose of regular insulin.
d) Increase the P.M. dose of NPH insulin.
e) Decrease the P.M. dose of NPH insulin.

662. A child has a bacterial sinusitis. Most common associated infection:
   - a) Otitis media
   - b) Pharyngitis
   - c) Tonsillitis
   - d) Retropharyngeal abscess
   - e) Brain abscess

663. A 9-year-old boy has HIV infection. He developed acute sinusitis. He was treated with amoxicillin-clavulate. His clinical condition did not improve despite antibiotic therapy. X-ray of sinuses reveal mucosal thickening, air-fluid levels, and sinus opacification. The best diagnostic study for this patient:
   - a) Sinus aspirate
   - b) Nasal swab cultures
   - c) Blood culture
   - d) Urine culture
   - e) Gram stain of nasal aspirate

664. A 1-day-old male infant appears jaundice. The serum bilirubin level is 12 mg/dL. His peripheral blood smear reveals spherocytes. Most likely diagnosis:
   - a) G6PD deficiency
   - b) ‘ABO’ hemolytic disease
   - c) Rh hemolytic disease
   - d) Physiologic jaundice
   - e) Sepsis causing jaundice

665. In fetal alcohol syndrome, impairment of placental transfer of:
   - a) Calcium
   - b) Magnesium
   - c) Phosphorus
   - d) Zinc
   - e) Selenium

666. A 1-year-old boy swallowed some unknown quantities of drug pills. The bottle containing drug has no label. He vomited once at home and once in the ER. Physical examination reveals a bulging fontanelle and lethargy. Most likely cause of toxicity:
   - a) Vitamin A
   - b) Vitamin $B_1$
   - c) Vitamin C
   - d) Vitamin E
   - e) Vitamin $B_6$

667. A 6-year-old girl appears in the ER with history of a dog bite on the face and skull 2 hours ago. All of the following are important in evaluation of this patient except:
   - a) Complete history
   - b) Skull X-ray
   - c) Wound culture
   - d) Diagram of the injury should be recorded in the chart.
   - e) Depth and severity of the injury.

668. All of the following statements are true about herpes zoster virus (HSV) infection except:
   - a) Wrestlers with HSV cutaneous lesions should not participate in wrestling.
   - b) Open lesions should be covered.
   - c) Acyclovir decreases the rate of recurrence.
   - d) Chicken pox does not occur after herpes zoster infection.
   - e) Children are allowed to go to school if herpetic lesions are covered.

669. The virus can cause Burkitt’s lymphoma:
   a) Herpes virus
   b) Varicella virus
   c) CMV
   d) Respiratory syncitial virus
   e) Epstein-Barr virus (EBV)

670. Histologic findings of a Reed-Sternberg cell suggest the following disease:
   a) Neuroblastoma
   b) Pheochromocytoma
   c) Acute lymphocytic leukemia
   d) Chronic myelogenous leukemia
   e) Hodgkin’s disease

671. Most common cause of opthalmia neonatorum:
   a) Chlamydia trachomatis
   b) N. gonorrhoeae
   c) Pseudomonas aeruginosa
   d) S. aureus
   e) Adenovirus

672. Acrodermatitis enteropathica is a sign of:
   a) Zinc toxicity
   b) Selenium deficiency
   c) Zinc deficiency
   d) Copper deficiency
   e) Magnesium toxicity

673. An infant develops jaundice. The best way to distinguish biliary atresia from neonatal hepatitis:
   a) Ultrasonography of liver
   b) Serum direct bilirubin
   c) Hepatobiliary scan
   d) Serum alkaline phosphatase
   e) Abdominal CT scan

674. The predominate source of bleeding in a newborn with pulmonary hemorrhage:
   a) Interalveolar vessels
   b) Intraalveolar vessels
   c) Bronchial arteries
   d) Pulmonary arteries
   e) Bronchial veins

675. A symbolic play (symbol rather than words) manifest at:
   a) 1 year
   b) 2 years
   c) 3 years
   d) 4 years
   e) 5 years

676. A child appears with ritualistic movements and absence of eye contact:
   a) Normal
   b) Blindness
   c) Deafness
   d) Autism
   e) Bilirubin encephalopathy

677. A 2-year-old boy appears with fever (103°F) and cough for the last 3 days. Past medical history revealed three episodes of pneumonia, one episode of meningitis, and four episodes of otitis media. Blood culture is performed. The next diagnostic study:
a) Spinal tap
b) Chest X-ray
c) Urine culture
d) Serum immunoglobulins
e) Lung CT scan

678. A 10-year-old girl appears in a clinic for obesity. Her mother is concerned. The best way to confirm obesity:
a) Weight
b) Height
c) Waist size
d) Body mass index
e) Arm circumferance

679. A 24-week-gestational age preterm infant is kept NPO plus TPN (total parenteral nutrition). The infant develops dry, scaly dermatitis. Most likely cause:
a) Zinc deficiency
b) Lipid deficiency
c) Protein deficiency
d) Copper deficiency
e) Iron deficiency

680. Most common cause of cholestatic jaundice in NICU:
a) Hepatitis
b) 'ABO' hemolytic disease
c) Rh hemolytic disease
d) Galactosemia
e) TPN (total parenteral nutrition)

681. A 3-year-old boy appears in a clinic with mild lordosis and protuberant abdomen. The next step in management:
a) X-ray of vertebrae
b) Abdominal sonogram
c) CT scan of spine
d) Orthopedic referral
e) Reassurance

682. Most common cause of secondary hypertension in children:
a) Aortic coarctation
b) Portal vein thrombosis
c) Umbilical arterial catheter
d) Pheochromocytoma
e) Renal abnormality

683. The side-effect of a beta-blocking agent (e.g., propranolol):
a) Tachycardia
b) Increased exercise tolerance
c) Bronchodilatation
d) Decreased serum lipids
e) Vivid dreams

684. A 4-year-old girl appears in the ER with bilateral periorbital ecchymoses due to a fall accidentally onto her head. Mother denies history of vomiting, seizure, and unconsciousness. This accident happened at the park

while she was playing. The girl is active, alert, and responsive. Physical examination is unremarkable except bilateral ecchymoses. The next step in the management:
a) Observe the patient for 6 hours in the ER.
b) Discharge the patient home with a follow-up in the clinic next day.
c) Spinal tap
d) Opthalmologic consultation STAT
e) Head CT scan

685. A 16-year-old girl appears in a clinic with history of headache without vomiting for the last 3 months. She has a bitemporal headache that occurs daily. She denies seizure and neurological symptoms. Physical examination reveals a normal visual activity but blurring of the optic disc margin. The rest of the examination is normal. Most likely diagnosis:
a) Brain tumor
b) Migraine
c) Pseudotumor cerebri
d) Viral meningitis
e) Glaucoma

686. Most common cause of postgonococcal urethritis:
a) Chlamydia trachomatis
b) S. aureus
c) Treponema pallidum
d) Virus
e) Gonococcus

687. Most common methicillin resistant S. aureus (MRSA) strain:
a) Phage group I
b) Phage group II
c) Phage group III
d) Phage group IV
e) Nontypable

688. The cranial nerve involved in type II Chiari malformation:
a) VII
b) IX
c) X
d) XI
e) XII

689. A 17-year-old girl appears in the ER with dystonia or athetosis. She took several carbamazepine tablets. The preferred therapy for a drug-related dystonia:
a) Intravenous diazepam
b) Oral lorazepam
c) Intravenous lorazepam
d) Intravenous diphenhydramine
e) Perrectal paraldehyde

690. A 3-year-old child is diagnosed with a extrapyramidal (athetoid) cerebral palsy. Physical examination reveals all of the following except:
a) Delayed gross motor
b) Normal fine motor
c) Delayed speech
d) Normal intelligence
e) Normal problem solving

691. Most common organism responsible for a nosocomial infection:

a) S. aureus
b) Streptococcus viridans
c) S. epidermidis
d) Pseudomonas aeruginosa
e) Chlamydia trachomatis

692. A 12-month-old girl is diagnosed with Werdnig-Hoffman disease. The cranial nerve involved in this disease.
a) VII
b) IX
c) X
d) XI
e) XII

693. A 6-year-old boy appears in the ER with history of fever (101°F), diarrhea, abdominal cramp, and passage of stool containing blood and mucus. He is taking penicillin for acute tonsillopharyngitis. The management may include all of the following except:
a) Use cholestyramine
b) Use metronidazole
c) Discontinue penicillin
d) Oral metronidazole is preferred therapy for most children.
e) Oral vancomycin

694. Side effects of cyclophsphamide include all of the following except:
a) Leukocytosis
b) Hemorrhagic cystitis
c) Alopecia
d) Sterility
e) Disseminated varicella infection

695. A 8-year old boy appears in a clinic for a routine check up. Urinalysis reveals microscopic hematuria. He is asymptomatic. Physical examination is unremarkable. Most likely diagnosis:
a) Nephrotic syndrome
b) Acute glomerulonephritis
c) Polycystic kidney
d) Renal stone
e) Absence of renal disease

696. A female child is admitted with DIC (disseminated intravascular coagulation). Her laboratory findings include all of the following except:
a) Increased fibrin split product
b) Increased d-dimer
c) Increased fibrinogen
d) Prolonged PT and PTT
e) Decreased factor VIII, II and V

697. A 12-year-old boy is receiving warfarin anticoagulation therapy for his mechanical heart valve. The dose of warfarin should be adjusted for an effective therapy. The goal is keep INR (international normalized ratio) between:
a) 1.1 to 1.4
b) 1.5 to1.9
c) 2 to 2.5
d) 2.6 to 2.9
e) 3 to 4

698. The antidote for overdose of heparin:
a) Vitamin K

b) Fresh frozen plasma
c) Blood transfusion
d) Factor VIII
e) Protamine sulfate

699. A pregnant mother is diagnosed with hyperparathyroidism. The newborn is delivered. Most likely effect on the newborn:
a) Hypocalcemia
b) Hypercalcemia
c) Hyperparathyroidism
d) Hypermagnesemia
e) Hypophosphatemia

700. Angiotensin I (inactive decapeptide) is formed in:
a) Liver
b) Kidneys
c) Lungs
d) Adrenals
e) Pancreas

701. Angiotensin II (active octapeptide) is formed in:
a) Liver
b) Kidneys
c) Lungs
d) Adrenals
e) Pituitary

702. A 4-day-old 26 weeks gestational age preterm infant on a mechanical ventilator developed PDA (patent ductus arteriosus) murmur. The fluid was restricted. However, the murmur was audible and PDA was confirmed by an echocardiogram. Indomethacin therapy is contraindicated when:
a) BUN value is 18 mg/dL
b) Platelet count is 55,000
c) Creatinine level is 1.9 mg/dL
d) Necrotizing enterocolitis
e) Urine output is 1.1 mL/Kg/hour

703. A 6-week-old 26 weeks gestational age preterm infant is on a mechanical ventilator. The ventilator setting is IMV 30, PIP 20, PEEP 5, $Fio_2$ 35%, inspiratory time 0.45 second, and flow rate 8 L/minute. ABG reveals pH 7.50, $PCO_2$ 59, $PO_2$ 80, $HCO_3$ 34, base excess +3.5. Most likely diagnosis:
a) RDS (respiratory distress syndrome)
b) Pneumothorax
c) Pulmonary hemorrhage
d) PIE (pulmonary interstitial emphysema)
e) BPD (bronchopulmonary dysplasia)

704. A 30-week-gestational age premature infant has been passing 5 to 6 stools per day for the last 3 days. All stools are semi-solid in consistency. Most likely diagnosis:
a) Normal
b) Diarrhea
c) Necrotizing enterocolitis
d) Milk protein allergy
e) Pseudomembranous colitis

705. A child appears with a rapidly progressive cavernous hemangioma, thrombocytopenia, and microangiopathic hemolytic anemia. Most likely diagnosis:
a) Osler-Weber-Rendu disease

b) Sturge-Weber syndrome
c) Kasabach-Merritt syndrome
d) EEC syndrome
e) LEOPARD syndrome
f)

706. A child appears with Christmas tree pattern lesions over the trunk and proximal limbs. The lesions are oval or round, slightly raised, pink to brown, and less than 1 cm diameter.
a) Scabies.
b) Pemphigus vulgaris
c) Vitiligo
d) Nummular eczema
e) Pityriasis rosea

707. All of the following statements are true about SIDS (sudden infant death syndrome) except:
a) Elimination of prenatal smoking reduces the risk of SIDS due to increased birth weight of an infant.
b) The risk of SIDS progressively increases as birth weight decreases.
c) Both prone and side sleeping increase the risk of SIDS.
d) SIDS patients have decreased immunization and decreased routine office visits.
e) SIDS occurs most likely due to brain stem developmental abnormality.

708. An infant is diagnosed with a congenital cerebral neoplasm. Most likely clinical manifestation:
a) Headache
b) Bradycardia
c) Hydrocephalus and increased intracranial pressure
d) Seizure
e) Papilledema

709. Steven-Johnson syndrome may develop due to an infection caused by:
a) S. aureus
b) Streptococcus pneumoniae
c) Chlamydia trachomatis
d) Mycoplasma pneumoniae
e) Pseudomonas aeruginosa

710. All of the following statements are true about Campylobacter jejuni infection except:
a) Abdominal pain mimics appendicitis.
b) Stool culture is a confirmatory test.
c) Infants and children in diapers with symptomatic infection should not participate in child care.
d) Stool cultures should be performed in all exposed and asymptomatic children.
e) An asymptomatic person can handle food if appropriate hygienic measures are taken.

711. All of the following conditions can cause an obstructive lung disease except:
a) Meconium aspiration
b) Asthma
c) Pneumothorax
d) Bronchiolitis
e) Bronchopulmonary dysplasia

712. All of the following conditions can cause a restrictive lung disease except:
a) Emphysema
b) Pneumonia
c) Diaphragmatic hernia
d) Atelactasis
e) Tuberculosis

713. The true statement about the effects of cocaine use:

a) Hypertension
b) Increased fatigue
c) Physical dependence
d) Decreased sexual activities
e) Bradycardia

714. A pregnant woman received phenytoin during pregnancy for seizure disorder. The most likely effect on the newborn:
a) Sedation
b) Nasal congestion
c) Bleeding
d) Hypertrophic nails
e) Truncus arteriosus

715. The correct composition of OHS (oral hydrating solution):
a) Na 90, K 40, Cl 85, bicarbonate 30, glucose 140, osmolality 290
b) Na 75, K 40, Cl 50, citrate 10, glucose 120, osmolality 300
c) Na 45, K 20, Cl 35, citrate 30, glucose 140, osmolality 250
d) Na 45, K 40, Cl 35, citrate 20, glucose 140, osmolality 260
e) Na 90, K 20, Cl 35, bicarbonate 40, glucose 140, osmolality 310

716. A male child is diagnosed to have HIV positive and is being treated with zidovudine (ZDV). A routine CBC result reveals anemia and granulocytopenia. The dose of ZDV is reduced. The repeat CBC reveals a normal result. The next step in the management:
a) Decreased ZDV dosage should be continued.
b) Increased the ZDV dose to a previous level.
c) Discontinue ZDV and start didanosine (ddI)
d) Discontinue ZDV and start indinavir
e) Give both didanosine and indinavir

717. The drug of choice for PCP (Pneumocystis carinii pneumonia) prophylaxis:
a) Penicillin
b) Rifampin
c) Amoxicillin
d) Pentamidine
e) Trimethoprim-sulfamethoxazole

718. A pregnant mother is diagnosed with HIV positive. She delivered a 3.4 kg healthy male newborn. The next step in management:
a) Start zidovudine 6 mg/kg/day divided Q.6.hours, orally for first 6 weeks.
b) Start zidovudine 8 mg/kg/day divided Q.6.hours, orally for first 6 weeks
c) No therapy is indicated.
d) Perform a HIV test for the newborn and wait for the result.
e) Start zidovudine 8 mg/kg/day divided Q.6.hours, orally for first 1 month

719. The best diagnostic study in HIV infection:
a) HIV RNA PCR
b) HIV DNA PCR
c) HIV culture
d) P 24 antigen
e) IgM anti-HIV

720. A pregnant mother has been receiving an anticonvulsant medication throughout this pregnancy. The newborn appears with hypertelorism, flattened nose, and hypoplastic nails. The anticonvulsant medication is:
a) Phenobarbital
b) Carbamazepine

c) Lorazepam
d) Paraldehyde
e) Phenytoin

721. The preferred therapy for all drug withdrawals in infants:
a) Phenobarbital
b) Morphine
c) Phenytoin
d) Tincture of opium
e) Diazepam

722. Most common pneumonia due to virus:
a) Rhinovirus
b) RSV
c) Echovirus
d) Herpes
e) CMV

723. A male child with history of coughing and vomiting was brought in the ER by his mother after accidental ingestion of gasoline. Physical examination reveals normal vital signs and an unremarkable physical findings. Chest X-ray is normal. The next step in management:
a) Start antibiotics
b) Intubate the child
c) Perform arterial blood gas
d) Do lung function test
e) Observe for 6 hours in ER before being discharge and should return to hospital if any symptoms develop.

724. A newborn appears with congenital scoliosis. Most common associated anomaly:
a) Cardiac
b) CNS
c) Pulmonary
d) Renal
e) VATER syndrome

725. A lactating mother is receiving a medication. She is concerned about the transmission of the medication through the breast milk. The best way to detect how much medicine the baby is receiving:
a) Peak serum level
b) Troph serum level
c) Serum total protein level
d) Binding of the drug with serum protein
e) Quantity of medicine in breast milk

726. The velocity curve of a component of human brain reveals ‘double peaks’. Most likely the component is:
a) Brain weight
b) Brain RNA
c) Brain DNA
d) Brain cholesterol
e) Brain mitochondria

727. In a female child with anorectal anomaly, colostomy is indicated in all of the following conditions except:
a) Perineal fistula
b) Vestibular fistula
c) Persistent cloaca
d) Rectal atresia
e) Imperforate anus without fistula

728. The best indicator in amniotic fluid to detect the lung maturity of the fetus:
   a) Lecithin (L)
   b) Sphingomyelin (S)
   c) L : S ratio
   d) Phosphatidylglycerol
   e) Phosphatidylinositol

729. A child appears in ER with dehydration and generalized seizure. Physical examination reveals bulging fontanelle and quadriparesis. Most likely diagnosis:
   a) Herpes infection
   b) Brain tumor
   c) Subdural hemorrhage
   d) Subarachnoid hemorrhage
   e) Sagittal sinus thrombosis

730. A 16-year-old boy went to Mexico. He developed severe watery stools with crampy abdominal pain and vomiting. He denies any fever. Stools have no blood. He was admitted to a hospital for dehydration. Stood culture was positive for E. coli. Most common type of E. coli responsible for his diarrheal episode:
   a) Enteropathogenic E. coli
   b) Enteroinvasive E. coli
   c) Enterotoxigenic E. coli
   d) Enteroaggregative E. coli
   e) Shigatoxin-producing E. coli

731. A 8-hour-old female newborn vomited a large amount of blood stained materials in a regular nursery. She was born by NSVD with Apgar scores 8 and 9 at 1 minute and 5 minutes respectively. Materal history reveals an abruptio placenta. Physical examination reveals a soft abdomen. She is active and alert. Her vital signs are normal. The next step in management:
   a) Perform PT and PTT
   b) Give vitamin K
   c) Perform an abdominal X-ray
   d) Perform Guiac test of the vomiting material
   e) Apt test

732. A female infant follows moving objects for 180 degrees. She smiles on social contact. She listens to voice and coos. She predominates a tonic neck posture. She sustains head-to-body plane on ventral suspension. She has no head control. She cannot sustain a social contact. Most likely age in months:
   a) 1
   b) 2
   c) 3
   d) 4
   e) 5

733. A 34-week-gestational age preterm male newborn delivered by NSVD. His mother had a history of preeclampsia. Her platelet count is 72,000. The newborn's CBC usually reveals:
   a) WBC count (35,000), polymorphs (80%), absolute neutrophil count (28,000), platelet count (150,000), hemoglobin (14), and hematocrit (42).
   b) WBC count (15,000), polymorphs (60%), absolute neutrophil count (9,000), platelet count (350,000), hemoglobin (16), and hematocrit (48).
   c) WBC count (20,000), polymorphs (75%), absolute neutrophil count (15,000), platelet count (85,000), hemoglobin (12), and hematocrit (36).
   d) WBC count (7,500), polymorphs (50%), absolute neutrophil count (3,750), platelet count (100,000), hemoglobin (23), and hematocrit (69).
   e) WBC count (5,000), polymorphs (20%), absolute neutrophil count (1,000), platelet count (60,000), hemoglobin (17), and hematocrit (50).

734. All of the following statements are true about L : S ratio (lecithin : sphingomyelin) except::
- a) By 35 weeks gestational age, L : S ratio become 2 : 1 (normal).
- b) In diabetic patients ratio should be 3 : 1 and above for adequate lung maturity.
- c) Contamination of specimen with meconium reduces reliability of result of L : S ratio.
- d) Contamination of specimen with blood (mother or fetus) alters significance of L : S ratio of 2 : 1 or more.
- e) About 25% of fetuses have no hyaline membrane disease, even with a L : S ratio of less than 2 : 1.

735. A 16-year-old boy appears in ER with history of sniffing glue. Most serious complication:
- a) Cardiac arrythmia
- b) Lead toxicity
- c) Agitation
- d) Ataxia
- e) Hypothermia

736. A female child is ready to begin toilet training:
- a) At 17-month-age
- b) She cannot follow simple instruction
- c) She passes stool on time
- d) She does not cry with wet pampers
- e) Her pampers are wet in the morning

737. A nonstress test in a pregnant women usually detects:
- a) Infant’s heart rate reactivity to fetal movement.
- b) Infant’s weight
- c) Infant’s stress status in utero
- d) Infant’s congenital malformation
- e) Infant’s heart rate reactivity to oxytocin drip.

738. A newborn male infant appears with a small chest cavity and extremely short limbs. Physical examination reveals asymmetric short limbs. X-ray reveals multiple fractures, some of them are healed. Most likely diagnosis:
- a) Child abuse
- b) Osteogenesis imperfecta
- c) Hypochondroplasia
- d) Thanatophoric dysplasia
- e) Conradi’s syndrome

739. A 2-year-old girl appears in ER with history of fever (104.2°F) for the last 24 hours. She is up to date in immunization. Physical examination reveals normal tympanic membrane, clear air entry in both lungs, and mildly injected pharynx. Mother denies abdominal pain. CBC reveals WBC count 26,500/Cu mm$^3$, polymorphs 80%, bands 15%, lymphocytes 4%, monocytes 1%, and platelet 270,000. Urinalyis is normal. Chest X-ray is normal. Most likely organism causing an infection:
- a) S. aureus
- b) E. coli
- c) Pseudomonas aeruginosa
- d) Streptococcus pneumoniae
- e) Hemophilus influenzae type b

740. A 7-day-old boy appears in clinic for a routine check up. He is receiving breast milk every 3-hour-interval. His birth weight was 4.0 kg. His present weight is 3.8 kg. The next step in management:
- a) Continue breast feeding every 3 hours
- b) Continue breast feeding every 2 hours
- c) Give high calorie formula
- d) Continue breast feeding every 1 hour
- e) Discontinue breast feeding and start formula feeding every 2 hours

741. A 12-year-old girl appears in ER with right ankle injury sustained during the school basket ball game. Physical examination reveals swollen and tender right ankle. X-ray reveals a Salter II fracture. Past history reveals she had an injury in right ankle 12 months age. Most likely interpretation of her injury:
a) Old injury that was not healed
b) Osteochondrosis
c) Osteomyelitis
d) Pathologic fracture
e) New injury

742. A 5-year-old boy appears in the ER with a burn more than 15% BSA (burn surface area). He has no difficulty in breathing. Initial fluid therapy should include:
a) Intravenous $D_{10}$ water 10 mL/kg/hour.
b) Oral hydration therapy without parenteral fluid.
c) Intravenous Ringer lactate solution 10 – 20 mL/kg/hour
d) Intravenous $D_5$ water 20 – 40 mL/kg/hour
e) Intravenous 0.45% sodium chloride 40 mL/kg/hour

743. A pregnant mother has neurofibromatosis. The risk of the newborn to have a neurofibromatosis:
a) 10%
b) 25%
c) 50%
d) 66%
e) 75%

744. Most of the physiologic action of thyroid is done by:
a) T 3
b) T 4
c) Free T 4
d) TSH
e) TRH

745. A 10-month-old male infant appears in a clinic with fever (101.8°F), conjunctival redness, sneezing, lacrimation, and intermittent cough for the last 14 days. For the last 24 hours, she is afebrile and URI symptoms improved. However, she has dry, intermittent, irritative hack followed by inexorable paroxysms. His immunization is up to date. CBC reveals WBC count 25,000, lymphocytes 80%, polymorphs 20%, and platelet count 425,000. Chest X-ray reveals a bilateral mild perihilar infiltrate. Most likely diagnosis:
a) Streptococcus pneumoniae
b) S. aureus
c) Chlamydia trachomatis
d) Pertussis
e) Viral pharyngitis

746. A 2-year-old boy appears with irritability, pruritus, and ataxia. He had Kasai procedure (hepatoportoenterostomy) at 3 months of age. Physical examination reveals hepatosplenomegaly and decreased deep tendon reflexes. Laboratory findings reveal a normal PT, calcium, phosphorus, bilirubin, and SGOT; mildly elevated SGPT; highly elevated alkaline phosphatase. Most likely deficiency:
a) Vitamin A
b) Vitamin D
c) Vitamin E
d) Vitamin K
e) Magnesium

747. A 16-year-old boy appears in ER with slurring speech, laughing inappropriately, and hallucinating. He also has nausea and restlessness. Most likely diagnosis:
a) Alcohol intoxication
b) Barbiturate

c) Phencyclidine (PCP)
d) Heroin
e) Cocaine

748. A child is diagnosed with trichinosis. Most likely source of infection:
a) Cow
b) Chicken
c) Pork
d) Lamb
e) Fish

749. Most common organism causing bacterial endocarditis after a dental procedure:
a) S. aureus
b) Streptococcus viridans
c) Group D enterococcus
d) Pseudomonas aeruginosa
e) Serratia marcescens

750. A child is diagnosed with tuberculous meningitis. The CSF examination reveals:
a) Increased polymorphs, increased protein, decreased glucose
b) Increased monocytes, increased protein, decreased glucose
c) Increased lymphocyte, increased protein, normal glucose
d) Increased lymphocyte, increased protein, decreased glucose
e) Increased lymphocyte then increased polymorphs, increased protein, normal glucose unless abscess rupture resulting in decreased glucose.

751. Most common organism in osteomyelitis after a puncture wound:
a) S. aureus
b) Pseudomonas aeruginosa
c) Serratia marcescens
d) Streptococcus pneumoniae
e) E. coli

752. Most common organism in osteomyelitis with or without sickle cell disease:
a) S. aureus
b) Pseudomonas aeruginosa
c) Serratia marcescens
d) Streptococcus pneumoniae
e) E. coli

753. Distribution of calories in human milk:
a) Protein (15%), fat (35%), carbohydrate (55%)
b) Protein (20%), fat (50%), carbohydrate (30%)
c) Protein (30%), fat (40%), carbohydrate (30%)
d) Protein (6%), fat (50%), carbohydrate (44%)
e) Protein (10%), fat (50%), carbohydrate (40%)

754. Distribution of calories in cow milk:
a) Protein (6%), fat (50%), carbohydrate (44%)
b) Protein (15%), fat (35%), carbohydrate (55%)
c) Protein (30%), fat (30%), carbohydrate (40%)
d) Protein (10%), fat (50%), carbohydrate (40%)
e) Protein (20%), fat (50%), carbohydrate (30%)

755. A child usually gains 30 g/day:
a) 0 – 3 months

b) 3 – 6 months
c) 6 – 9 months
d) 9 – 12 months
e) 12 – 15 months

756. Live virus vaccine:
a) IPV
b) MMR
c) DTaP
d) Hepatitis B
e) Hemophilus influenza type b

757. Physical growth assessment in adolescent is most accurately measured by:
a) Growth hormone level
b) Parents height
c) Testosterone level
d) Thyroid hormone level
e) Bone age

758. A 6-year-old boy appears in ER with a respiratory infection. He had seven times respiratory infections in the last 12 months. The next step in management:
a) Chest X-ray immediately
b) PFT (pulmonary function test)
c) PPD test
d) Throat culture
e) No need to perform an extensive work up.

759. First permanent teeth appears:
a) 5 – 6 years
b) 6 – 7 years
c) 7 – 8 years
d) 8 – 9 years
e) 9 – 10 years

760. A 3-year-old girl has a large progressively enlarging capillary hemangioma on the forehead. Mother is concerned. The next step in management:
a) Observation
b) Laser therapy
c) Electrical cautarization
d) Cryotherapy
e) Corticosteroids (oral / intradermal)

761. A 6-month-old boy is crying hard during the onset of a routine physical examination. He refused milk. The appropriate step in management:
a) Ignore his crying and continue examination
b) Tell mother to leave the room and continue examination
c) Hold the baby on your lap and continue examination
d) Give milk again and finish examination quickly.
e) Give baby back to mother until stops crying, then examine him.

762. A 5-year-old boy is admitted for an asthma attack. Intravenous $D_5$ water is started in the left hand. A blood electrolyte specimen is drawn from the left forearm. SMA6 results reveal Na 123, K 4, Cl 106, glucose 700, BUN 10, and creatinine 0.7. Urine specific gravity 1017. The next step in management:
a) Correct hyponatremia in 24 hours
b) Correct hyponatremia over 48 hours
c) Do not give excess sodium and draw another specimen from his right hand.

d) Restrict intravenous fluid
e) Give maintenance sodium

763. A 1-day-old female newborn is delivered by NSVD. Apgar scores are 7 and 8 at 1 and 5 minutes respectively. Physical examination reveals bilateral subconjunctival hemorrhages. The next step in management:
a) Opthalmology consult
b) Corticosteroids eye drop
c) Erythromycin eye ointment
d) Gentamicin eye drop
e) Observation

764. A 1-month-old 26-week-gestational age male has a difficulty in feeding. A central line is placed for intravenous hydration. Three weeks later, he developed apnea, bradycardia, and desaturation. Sepsis work up was performed. Most likely cause of infection:
a) S. aureus
b) S. epidermidis
c) Pseudomonas aeruginosa
d) Group B Streptococcus
e) E. coli

765. A male newborn is diagnosed with hypospadius. Time to repair hypospadius:
a) 0 – 3 months
b) 3 – 6 months
c) 6 – 12 months
d) 12 – 18 months
e) 18 – 24 months

766. A female newborn is diagnosed with a cleft lip. Time to repair cleft lip:
a) 1 month
b) 2 months
c) 3 months
d) 4 months
e) 6 months

767. Most common chromosomal abnormality in a child with mixed gonadal dysgenesis:
a) 45, X / 46, XY
b) 47, XXY
c) 45, X
d) 46, XX
e) 46, XY

768. A full term (40-week-gestational age) female newborn is delivered by a cesarean section for fetal distress. Her birth weight is 1.8 kg. Her head circumferance and length are less than 5 th percentile. Maternal history of chronic hypertension, preeclampsia, and oligohydramnios. Physical examination reveals a normal small for gestational age (SGA) female. CBC reveals WBC count 15,600, polymorphs 55%, lymphocytes 45%, platelet count 210,000, hemoglobin 15, and hematocrit 45. Her mother is concerned. Catch-up growth for most SGA newborns occur between:
a) 0 – 12 months
b) 12 – 24 months
c) 24 – 36 months
d) 36 – 48 months
e) 48 – 60 months

769. Most common organism in pneumonia for school age and older children:
a) Streptococcal pneumoniae
b) Chlamydia trachomatis

c) S. aureus
d) E. coli
e) Mycoplasma

770. Most common organism in meningitis between 2 months and 12 years of age:
a) Group B Streptococcus
b) Streptococcal pneumoniae
c) E. coli
d) Listeria
e) S. aureus

771. A 4-year-old girl is admitted with history of vomiting and diarrhea for the last 2 days. Physical examination reveals temperature (98.6°F), pulse rate 110 per minute, respiratory rate 24 per minute, blood pressure 95/55, dry mucous membrane, and soft abdomen. Serum SMA 6 result reveals Na 120, K 5, Cl 108, glucose 80, BUN 8 and creatinine 0.6. Urine specific gravity is 1010. The next step in management:
a) Correct hyponatremia over 24 hours
b) Correct hyponatremia over 48 hours
c) Give maintenance sodium
d) Correct hyponatremia over 8 hours
e) Repeat SMA 6

772. A male child appears with fever (103°F) and difficulty in swallowing and drooling for the last 36 hours. Physical examination reveals extended neck position, noisy breathing, and enlarged cervical glands. Most likely diagnosis:
a) Epiglottitis
b) Tonsillitis
c) Pharyngitis
d) Peritonsillar abscess
e) Retropharyngeal abscess

773. A child appears with a hypertrophy of the right upper extremity and right lower extremity than that of left extremities. Most likely diagnosis:
a) Adrenocortical tumor
b) Neuroblastoma
c) Pheochromocytoma
d) Adrenal medullary tumor
e) Wilms tumor

774. Serum alpha fetoprotein level is decreased
a) Omphalocele
b) Cirrhosis in early childhood
c) Meningomyelocele
d) Multiple gestation
e) Congenital nephrosis

775. Serum alpha fetoprotein is increased:
a) Incorrect gestational age
b) Trisomy 18
c) Trisomy 21
d) IUGR
e) Polycystic renal disease

776. A 4-year-old child is referred for a developmental screening. The test is not appropriate at this age:
a) Weschler Intelligence Test for children
b) Bender Gestalt
c) Goodenough drawing test

d) Baley scales of infant development
e) Early screening inventory

777. During the month of January ten children (up to 2 years) were admitted in a pediatric ward with respiratory symptoms. Eight of them were born prematurely. Most likely organism:
a) Haemophilus influenzae type b
b) Rhinovirus
c) Streptococcus pneumoniae
d) S. aureus
e) Respiratory syncitial virus

778. Infants are predisposed to allergy:
a) Dust
b) Pollen
c) Milk
d) Cat
e) Dog

779. Sensorineural hearing loss is usually noted:
a) Perforated ear drug
b) Otitis media
c) Congenital CMV
d) Tympanostomy tube
e) Wax in external auditory canal

780. Conductive hearing loss can occur:
a) Congenital syphilis
b) Tympanosclerosis
c) Genetic
d) Congenital rubella
e) Gentamicin toxicity

781. The cancer which is radioresistant:
a) Ewing sarcoma
b) Rhabdomyosarcoma
c) Retinoblastoma
d) Chondrosarcoma
e) Hodgkin's disease

782. All newborns usually have:
a) Insomnia
b) Narcolepsy
c) Sleep with a dream
d) REM (rapid eye movement) sleep
e) Non – REM sleep

783. A premature infant, when he / she becomes full term by age is:
a) Less active and alert than full term who is just born
b) More active and alert than full term who is just born.
c) Heavier than full term who is just born.
d) Lighter than full term who is just born.
e) Smarter than full term who is just born.

784. A 6-year-old boy appears in a clinic with history of hyperactivity and poor school performance. He cannot watch television more than a few minutes at a time. Physician also noted a reduced attention span and an impulsive behavior. Most likely diagnosis:

a) Normal child
b) Schizophrenia
c) Lead toxicity
d) Drug ingestion
e) ADHD (attention deficit hyperactivity disorder)

785. A child is diagnosed with a nonorganic failure to thrive. All of the following clinical manifestations may present except:
a) Poor hygiene
b) Sad facial expression
c) Hyperactivity
d) Withdrawing behavior
e) Indifference toward mother

786. A child appears in ER with loss of vision in both eyes in the last 12 hours. Physical examination reveals absence of tunnel vision, decreased visual acuity, 20 / 200 vision in both eyes, and blurring of both optic disc margins. Most likely diagnosis:
a) Conversion disorder
b) Brain tumor
c) Pseudotumor cerebri
d) Migraine
e) Optic neuritis

787. A fetal hemoglobin chain that rapidly decreases in first few months after birth:
a) Alpha chain
b) Beta chain
c) Gamma chain
d) Delta chain
e) Epsilon chain

788. An adult hemoglobin consist of:
a) Alpha 2, gamma 2
b) Beta 2, gamma 2
c) Alpha 2, Epsilon 2
d) Zeta 2, epsilon 2
e) Alpha 2, beta 2

789. A fetal hemoglobin chain that rapidly increases in first few months after birth:
a) Alpha chain
b) Beta chain
c) Gamma chain
d) Delta china
e) Epsilon chain

790. The life span of red blood cells decrease in newborns due to:
a) Increased alkaline phosphatase in RBCs.
b) Decreased alkaline phosphatase in RBCs.
c) Increased glucose 6 phosphatase in RBCs.
d) Increased phosphorylase in RBCs.
e) Decreased glutathione in RBCs.

791. The bonding between a mother and an infant should begin:
a) 0 – 4 hours
b) 5 – 24 hours
c) 25 – 48 hours
d) 3 – 7 days

e) 8 – 30 days

792. A child is diagnosed with warfarin toxicity. The therapy should include:
a) Vitamin E
b) Vitamin K
c) Factor IX
d) Heparin
e) Factor VIII

793. A fetal hemoglobin consists of:
a) Alpha 2, gamma 2
b) Beta 2, gamma 2
c) Alpha 2, epsilon 2
d) Zeta 2, epsilon 2
e) Alpha 2, beta 2

794. A child appears in a clinic with rashes. Physical examination reveals erythema multiforme exudativum. Most likely diagnosis:
a) Sarcoidosis
b) Rheumatic fever
c) Lyme disease
d) Steven-Johnson syndrome
e) Coccidioidomycosis

795. A 16-year-old girl has been using birth control pills for the last 3 months. She appeared with rashes. Most likely characteristic of rash:
a) Erythema marginatum
b) Erythema nodosum
c) Erythema multiforme
d) Erythema multiforme exudativum
e) Erythema chronicum migrans

796. A newborn is diagnosed with group B Streptococcus sepsis and PPHN (persistent pulmonary hypertension). Pulmonary vasoconstriction is due to:
a) Decreased thromboxane A 2
b) Increased thromboxane A 2
c) Increased $PGE_1$
d) Decreased $PGE_1$
e) Decreased tolazoline

797. A mother should be allowed to breast-feed if she is taking the following medications:
a) Anticoagulants
b) Methimazole
c) Antihypertensives
d) Iodides
e) Cimetidine

798. Drugs are safe to use by lactating mothers if drugs have the following characteristics except:
a) Plasma bound
b) Weaker acids
c) Small molecules
d) Poorly absorbed from maternal GI tract
e) Poorly absorbed from newborn GI tract

799. True statement about chorion and zygote:
a) Dichorionic is always dizygotic.
b) Dichorionic is dizygotic in 20% of cases, monozygotic in 80% of cases.

c) Monochorionic is dizygotic in 30% of cases.
d) Monochorionic is dizygotic in 5% of cases.
e) Monochorionic is always monozygotic.

800. The zygocity is confirmed by:
a) Pelvic ultrasonography
b) MRI
c) Laparoscopy
d) DNA analysis
e) Transvaginal ultrasonography

801. Hemihypertrophy can be found in all of the following except:
a) Neuroblastoma
b) Hepatoma
c) Wilms tumor
d) Adrenocortical tumor
e) Adrenocortical hyperplasia

802. Retinitis pigmentosa is noted in all of the following except:
a) Abetalipoproteinemia
b) Refsum disease
c) Hunter syndrome
d) Hurler syndrome
e) Down syndrome

803. Salt-and-pepper appearance in retina is noted in newborns:
a) Toxoplasmosis
b) CMV
c) Congenital syphilis
d) Herpes
e) Retinoblastoma

804. Influenza vaccine is indicated in all of the following except:
a) Cystic fibrosis
b) Chronic sinusitis
c) Sickle cell anemia
d) Congenital heart disease
e) Bronchopulmonary dysplasia

805. A male child appears in ER with history of fever (103.9°F), difficulty in swallowing, and drooling for the last 14 hours. Physical examination reveals muffled voice, aphonia, and forward leaning posture. He refuses to lie down during examination. Most likely diagnosis:
a) Peritonsillar abscess
b) Acute tonsillopharyngitis
c) Acute sinusitis
d) Epiglottitis
e) Retropharyngeal abscess

806. A 10-year-old boy appears with a short stature. His height is less than 5 th percentile. His weight is between 10 th and 25 th percentile. His parents are worried. His parents are short. His father is 5 ft 2 inches tall. His mother is 5 ft tall. His bone age is same as chronological age. The next appropriate statement:
a) He remains short for rest of life.
b) He will be taller than his mother.
c) He will be taller than his father.
d) His final height will be between 25 th and 50 th percentiles.
e) His final height will be between 10 th and 25 th percentiles.

807. A 9-year-old girl appears with a short stature. Her height is less than 5 th percentile. Her weight is between 25 th and 50 th percentile. Her mother is concerned. Her father is 5 feet 9 inches tall. Her mother is 5 feet 6 inches tall. Her bone age is less than chronological age. The next appropriate statement:
a) She remains short for rest of life.
b) She remains short until puberty then increases height to a normal adult height (above 5 th percentile).
c) She will be taller than her father.
d) She will be taller than her mother.
e) Her final height will be above 95 th percentile.

808. A 6-year-old boy appears with lethargy and poor school performance for the last 1 year. His mother noticed that his height remains same for the last 1 year. His height drops from 25 th percentile to a 5 th percentile. His weight remains 25 th percentile. His bowel movement is once every 7 days for the last one year. His bowl movement was regular before that. Most likely diagnosis:
a) Hyperthyroidism
b) Brain tumor
c) Hypoadrenalism
d) Hypothyroidism
e) Hypoparathyroidism

809. Which of the following part of body achieve 90% of adult size by five years of age?
a) Brain
b) Thymus
c) Ovary
d) Lymphatic
e) Skeletal muscle

810. Which of the following part of body school-aged children has more than in adult?
a) Brain
b) Thymus
c) Testes
d) Lymphatic
e) Cardiac muscle

811. Which of the following part of body has rapid growth in first 5 years, average growth from 5 to 10 years, and again rapid growth from 10 – 18 years?
a) Brain
b) Thymus
c) Uterus
d) Lymphatic
e) Liver

812. Which of the following part of body has slow growth in first 12 years, then rapid growth from 12 – 18 years?
a) Brain
b) Thymus
c) Genitalia
d) Lymphatic
e) Bone

813. Which of the following part of body has rapid growth in first 5 years and involutes rapidly in adolescence?
a) Brain
b) Thymus
c) Hemoglobin
d) Lymphatic
e) Blood volume

814. All of the following components of the body have slow growth in first 12 years, then rapid growth from 12 – 18 years except:
   a) Iron
   b) Folate
   c) Blood volume
   d) Hematocrit
   e) Alkaline phosphatase

815. Which of the following component of the body has a maximum quantity at 9 months, then decreases in quantity for up to 6 years, then spurts at preadolescence?
   a) Skeletal muscle
   b) Cardiac muscle
   c) Skull
   d) Spleen
   e) Subcutaneous fat

816. True statement in a full term newborn:
   a) Ossification is present in distal femur and proximal tibia.
   b) Ossification is present in clavicle.
   c) Ossification is present in membranous skull.
   d) Fusion occurs between humeral shaft and capitellum.
   e) Calcification is present in central incisor deciduous teeth.

817. A full term male newborn appears with IUGR (intra uterine growth retardation). His height, weight, and head circumferance are all less than 5 th percentiles. He will remain less than 5 th percentile rest of his life. Most likely cause:
   a) Maternal preeclampsia
   b) Maternal hypertension
   c) Maternal type II diabetes that was not controlled.
   d) Maternal renal transplantation
   e) Maternal rubella infection in first trimester

818. A full term female newborn appears AGA (appropriate for gestational age). Her growth and development remains appropriate for the first 3 years of life (25 th percentile). After that her growth becomes stunted (less than 5 th percentile). Her immunization is up to date. Other siblings are healthy. Most likely cause:
   a) Nutritional neglect
   b) Child abuse
   c) Growth hormone deficiency
   d) Parents are separated but her father visits regularly.
   e) Hyperthyroidism

819. A 30-week-gestational age preterm male newborn is placed on a mechanical ventilator for RDS (respiratory distress syndrome). ABG reveals pH 7.20, $PCO_2$ 65, $PO_2$ 76, bicarbonate 35, base excess +0.5, and oxygen saturation 95%. Most likely interpretation of the ABG:
   a) Respiratory alkalosis
   b) Metabolic alkalosis
   c) Respiratory acidosis
   d) Metabolic acidosis
   e) Combined respiratory and metabolic acidosis

820. A 7-day-old 32-week-gestaional age preterm female infant is on a mechanical ventilator with IMV 10, inspiratory time 0.5 second, PIP 15, PEEP 4, $Fio_2$ 21%, flow rate 6 L/minute. ABG reveals pH 7.54, $PCO_2$ 20, $PO_2$ 85, bicarbonate 10, base excess +1.5, and oxygen saturation 98%. Most likely interpretation of the ABG:
   a) Respiratory acidosis
   b) Metabolic acidosis
   c) Respiratory alkalosis

d) Metabolic alkalosis
e) Compensated respiratory alkalosis

821. A 25-week-gestational age preterm male newborn is diagnosed with NEC (necrotizing enterocolitis). He is on a mechanical ventilator with IMV 30, PIP 18, PEEP 5, $Fio_2$ 40%, flow rate 7 L/minute, and inspiratory time 0.45 second. ABG reveals pH 7.21, $PCO_2$ 34, $PO_2$ 70, bicarbonate 12, base deficit –15.6, and oxygen saturation 93%. Most likely interpretation of the ABG:
a) Respiratory acidosis
b) Metabolic acidosis
c) Respiratory alkalosis
d) Metabolic alkalosis
e) Compensated respiratory acidosis

822. A full term female newborn is diagnosed with meconium aspiration. He is on a mechanical ventilator with IMV 60, PIP 25, PEEP 4, $Fio_2$ 100%, flow rate 10 L/minute, and inspiratory time 0.4 second. ABG reveals pH 7.01, $PCO_2$ 62, $PO_2$ 68, bicarbonate 14, base deficit –12.7, and oxygen saturation 85%. Most likely interpretation of the ABG:
a) Respiratory acidosis
b) Metabolic acidosis
c) Respiratory alkalosis
d) Respiratory acidosis
e) Combined respiratory and metabolic acidosis

823. Hemoglobin electrophoresis test result of a child reveals hemoglobin A 96%, hemoglobin A2 3.5%, hemoglobin F 0.5%, and hemoglobin S 0%. Hemoglobin is normal and MCV is normal. Most likely diagnosis:
a) Sickle cell trait
b) Sickle cell disease
c) Thalassemia minor
d) Hemoglobin SC disease
e) Normal

824. A 4-year-old black female appears pale. CBC reveals retic 12%, WBC 10,000, polymorphs 60%, lymphocyte 40%, hemoglobin 7, hematocrit 21, MCV 78, and Howell – Jolly bodies. Hemoglobin electrophoresis test result reveals hemoglobin A 0%, hemoglobin A2 2%, hemoglobin F 4%, and hemoglobin S 94%. Most likely diagnosis:
a) Sickle cell trait
b) Thalassemia major
c) Sickle cell disease
d) Sickle beta thalassemia
e) Sickle alpha thalassemia

825. A 6-year-old black male appears for a routine check up. His CBC reveals a normal hemoglobin, hematocrit, and MCV. Hemoglobin electrophoresis reveals hemoglobin A 50%, hemoglobin A2 2%, hemoglobin F 0%, and hemoglobin S 48%. Most likely diagnosis:
a) Sickle cell trait
b) Sickle cell disease
c) Thalassemia minor
d) Thalassemia major
e) Sickle alpha thalassemia

826. A 2-year-old boy appears with diminished growth and hepatosplenomegaly. Blood smear reveals target cells and poikilocytes. CBC reveals hemoglobin 4.5, hematocrit 14.0, MCV 45, WBC 6,000, polymorphs 55%, lymphocytes 45%, and platelet 205,000. Hemoglobin electrophoresis reveals hemoglobin A 20%, hemoglobin A2 4%, hemoglobin F 76%, hemoglobin S 0%, and an elevated ratio of A2 and A. Most likely diagnosis:
a) Thalassemia minor
b) Thalassemia major
c) Sickle cell disease

d) Sickle alpha thalassemia
e) Hemoglobin SC disease

827. A 12-month-old girl appears pale and less active. CBC reveals hemoglobin 9, hematocrit 27, MCV 63, WBC count 8,500, polymorphs 45%, lymphocytes 55%, and platelet 216,000. Hemoglobin electrophoresis reveals hemoglobin A 97%, hemoglobin A2 2.7%, hemoglobin F 0.3%, hemoglobin S 0%. Most likely diagnosis:
a) Sickle cell trait
b) Thalassemia minor (beta)
c) Normal
d) Thalassemia trait (alpha)
e) Iron deficiency anemia

828. A 3-year-old boy appears with massive splenomegaly and paleness. CBC reveals hemoglobin 9, hematocrit 27, WBC count 11,000, many target cells, polymorphs 51%, lymphocytes 45%, monocytes 4%, and platelet count 369,000. Hemoglobin electrophoresis reveals hemoglobin A 0%, hemoglobin A2 0%, hemoglobin F 2%, hemoglobin S 49%, and hemoglobin C 49%. Most likely diagnosis:
a) Sickle cell trait
b) Sickle cell disease
c) Sickle beta thalassemia
d) Hemoglobin SC disease
e) Sickle alpha thalassemia

829. A 4-year-old girl appears in a clinic for a routine check up. A routine CBC reveals hemoglobin 14, hematocrit 42, MCV 63, WBC count 9,800, polymorphs 60%, lymphocytes 35%, monocytes 2%, eosinophils 3%, and platelet 362,000. Hemoglobin electrophoresis reveals hemoglobin A 97%, hemoglobin A2 2.8%, hemoglobin F 0.2%, and hemoglobin S 0%. Most likely diagnosis:
a) Thalassemia (alpha) trait
b) Thalassemia minor (beta)
c) Iron deficiency anemia
d) Sickle cell trait
e) Hemoglobin SC disease

830. A 5-year-old boy appears with splenomegaly and paleness. CBC reveals hemoglobin 8, hematrocrit 24, MCV 70, WBC count 7,600, polymorphs 55%, lymphocyte 45%, platelet 219000. Hemoglobin electrophoresis reveals hemoglobin A 20%, hemoglobin A2 8%, hemoglobin F 10%, and hemoglobin S 62%. Most likely diagnosis:
a) Sickle cell disease
b) Sickle cell trait
c) Sickle alpha thalassemia
d) Sickle beta thalassemia
e) Thalassemia major

831. All of the following are recommended for an athlete regarding dietary requirements except:
a) Special diet
b) Adequate calories
c) Essential nutrients
d) Balanced diet
e) Water should be given before and during exercise.

832. A 2-year-old girl appears in a clinic with history of poor feeding. Mother is concerned. She is active, alert, and very energetic. Physical examination is unremarkable. The next step in management:
a) Force child to eat
b) Only give high calorie food
c) Don’t give any juice or soda
d) Reassurance
e) Don’t let her watch TV without eating nutritious food.

833. The true statement about the growth of a vegetarian infant as compared to a omnivorous infant in first 2 years of life:
a) Vegetarian infant has a low cholesterol level than that of omnivorous infant.
b) Vegetarian infant has a low risk of milk protein allergy than that of omnivorous infant.
c) Vegetarian infant has low calcium level than that of omnivorous infant.
d) Vegetarian infant has low iron level than that of omnivorous infant.
e) Vegetarian infant may not grow as fast as the omnivorous infant.

834. A child is diagnosed with asplenia. The vaccine should not be given:
a) Rotavirus
b) DTaP
c) MMR
d) Hepatitis B vaccine
e) Hemophilus influenzae type b

835. The true statement about the vaccination in a lactating woman:
a) Lactation has a risk to the baby because live viruses are present inside the breast milk.
b) IPV vaccine is given if she is traveling to an endemic area.
c) MMR vaccine is contraindicated.
d) Varicella vaccine is contraindicated.
e) Influenza vaccine is not indicated.

836. A 14-year-old beautiful girl appears with primary amenorrhea. Her mother is concerned. Physical examination reveals enlarged breasts, absence of pubic hair, and bilateral inguinal masses. Most likely diagnosis:
a) Reifenstein syndrome
b) Denys-Drash syndrome
c) 5-alpha-reductase deficiency
d) Testicular feminization syndrome
e) Swyer syndrome

837. Most common cause of female pseudohermaphroditism:
a) Placental aromatase deficiency
b) Maternal masculinizing tumor of ovary
c) Mother use testosterone during pregnancy
d) Maternal masculinizing tumor of adrenal
e) Congenital adrenal hyperplasia (CAH)

838. The organism responsible for enteritis necroticans:
a) Clostridium perfringens type C
b) E. coli
c) Listeria
d) S. aureus
e) Group B Streptococcus

839. A preterm newborn is diagnosed with necrotizing enterocolitis (NEC). The definitive diagnostic test for NEC:
a) Abdominal CT scan
b) Abdominal X-ray
c) Abdominal ultrasonography
d) Guiac test gastric content positive for blood
e) Guiac test stool positive for blood

840. A 4-year-old male asymptomatic child appears for a routine check up. He had an ear infection 3 years ago. Physical examination reveals bilateral middle-ear effusions. Most likely diagnosis:
a) Acute otitis media
b) Chronic otitis media
c) Otitis externa

d) Middle ear cholesteatoma
e) Eustachian tube dysfunction or obstruction

841. The true statements about testicular torsion are all of the following except:
a) Extravaginal torsion is more common in children than intravaginal torsion.
b) Newborns appear with a large, firm, and ecchymotic testis.
c) Cremastaric reflex is absent in children with a torsion.
d) A prompt surgical exploration within 6 hours can save up to 90% of gonads after scrotal orchiopexy.
e) In a neonate, remove necrotic testis and fix other.

842. Most common feature of septo-optic dysplasia of de Morsier:
a) Agenesis of corpus callosum
b) Agenesis of septum pellucidum
c) Optic nerve hypoplasia
d) Hypoglycemia
e) Seizure

843. Most common cause of an absent testis:
a) Nerve injury
b) Vascular accident
c) Decreased FSH
d) Decreased testosterone level
e) Decreased dehydrotestosterone level

844. Jarisch-Herxheimer reaction can occur during penicillin therapy in which condition:
a) Sickle cell disease
b) Acute tonsillopharyngitis
c) UTI prophylaxis
d) Relapsing fever
e) Endocarditis

845. A 17-year-old girl appears with a copious malodorous yellow vaginal discharge, vulvovaginal irritation, and dysuria for the last 7 days. She is sexually active. Physical examination reveals a frothy discharge with vaginal erythema and cervical hemorrhage. Vaginal discharge pH is 5.6. Most likely diagnosis:
a) Monilial vaginitis
b) Gonorreal vaginitis
c) Chlamydial vaginitis
d) Herpes vaginitis
e) Trichomonas vaginitis

846. A 6-year-old boy is admitted to a PICU with head trauma from a car accident. About 6 hours later he developed a generalized convulsion that lasted for 2 minutes. The drug of choice for a seizure in this patient:
a) Phenobarbital
b) Phenytoin
c) Carbamazepine
d) Lorazepam
e) Paraldehyde

847. All of the following are complications of systemic steroid use except:
a) Hyperglycemia
b) Hypertension
c) Diabetes insipidus
d) Diabetes mellitus
e) Posterior subcapsular cataract

848. A 3-week-old healthy female infant appears with crusted pustular lesions over vulva and periumbilical areas. Most likely organism:
   a) S. aureus
   b) S. epidermidis
   c) Herpes
   d) Group B Streptococcus
   e) Candida albicans

849. A 6-year-old girl appears with a vaginal bleeding and smelly vaginal discharge. Most likely diagnosis:
   a) Sexual abuse
   b) Gonococcal infection
   c) Chlamydia infection
   d) Foreign body
   e) Maternal estrogen withdrawal bleeding

850. A 10-year-old girl appears with a progressive weakness in both lower extremities, pain in the lower back and abdomen, and urinary incontinence for the last 24 hours. She had a viral infection recently. Physical examination reveals a loss of pain, light touch, and temperature sensations; loss of reflexes; but the joint position and vibration sense are intact. Later on she developed spasticity and hyperreflexia in lower extremities. CBC reveals WBC count 9,500, polymorphs 45%, lymphocytes 55%, hemoglobin 12, hematocrit 36, and platelet 225,000. CSF reveals an elevated lymphocytes (35 cells), absence of polymorphonuclear leukocytes, mildly elevated protein (55 mg/dL), and normal glucose (60 mg/dL). Most likely diagnosis:
   a) Botulism
   b) Brain tumor
   c) Poliomyelitis
   d) Transverse myelitis
   e) Guillain-Barre syndrome

851. A 14-year-old boy appears with a history of a progressive ascending weakness started from both lower extremities to the trunk, both upper extremities, and bulbar muscles for the last 4 days. He had an URI symptoms for the last 2 weeks. He refuses to walk. He has mild respiratory distress. He also has dysphagia. He is intubated and placed on a mechanical ventilator. Physical examination reveals absence of tendon reflexes, hypotonia, and facial muscle weakness. CSF study reveals proten 120 mg/dL, 3 WBCs per $mm^3$, all lymphocytes, and glucose 70 mg/dL. Most likely diagnosis:
   a) Guillain-Barre syndrome
   b) Transverse myelitis
   c) Botulism
   d) Poliomyelitis
   e) Brain tumor

852. Most common cause of sensorineural hearing impairment in childhood:
   a) Recurrent otitis media
   b) Genetic
   c) Trauma to middle ear
   d) Gentamicin toxicity
   e) Eustachian tube dysfunction

853. The best diagnostic study in peroneal muscle atrophy (Charcot-Marie-Tooth disease, HMSN type II):
   a) EMG
   b) Muscle biopsy
   c) Sural nerve biopsy
   d) CPK
   e) CSF protein

854. The preferred therapy for acetaminophen toxicity:
   a) Hemoperfusion

b) Amyl nitrite
c) Peritoneal dialysis
d) Acetylcysteine (mucomist)
e) Methylene blue

855. The preferred therapy for tricyclic antidepressant (TCA) toxicity:
a) Naloxone
b) Diphenhydramine
c) Methylene blue
d) Sodium bicarbonate
e) Physostigmine

856. The preferred therapy for methemoglobinemia:
a) Methylene blue
b) Naloxone
c) Amyl nitrite
d) Hemoperfusion
e) Deferoxamine

857. A 15-year-old girl appears with history of secondary amenorrhea. She denies sexual activities. Physical examination is unremarkable. The next step in management:
a) Vaginal smear for estrogen
b) Serum FSH level
c) Serum LH level
d) Pregnancy test
e) Serum prolactin level

858. A 16-year-old girl appears with history of delayed primary amenorrhea. She denies sexual activities. Physical examination is unremarkable. Pregnancy test is negative. The next step in management:
a) Perform vaginal smear for estrogen and /or therapy with medroxyprogesterone
b) Repeat pregnancy test
c) Perform karyotype
d) Serum FSH level
e) Serum TSH level

859. Most girls have menarche in which sex maturity rating (SMR) or Tanner Staging:
a) SMR 1
b) SMR 2
c) SMR 3
d) SMR 4
e) SMR 5

860. Most common site of injury resulting in a neurovascular compromise:
a) Wrist injury
b) Ankle injury
c) Knee injury
d) Hip injury
e) Elbow injury

861. Mode of inheritance in cleft lip and palate:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

862. The cause of hemifacial microsomia:
- a) Cellular death defect
- b) Collagen defect
- c) Circulation defect
- d) Muscular defect
- e) Nerve defect

863. Chromosomal abnormalities in Turner syndrome include all of the following except:
- a) 45, X
- b) 45, X / 46, XX
- c) 45, X / 46, XY
- d) 45, X / 46, X, r(X)
- e) 45, X / 46, X, i(Xq)

864. Most common cause of childhood nasal polyposis:
- a) Allergic rhinitis
- b) Allergic sinusitis
- c) Vasomotor rhinitis
- d) Cystic fibrosis
- e) Deviated nasal septum

865. A 5-year-old boy is developmentally delayed since birth and is wearing a hearing aid. The boy was diagnosed SGA (small for gestational age) at birth and had thrombocytopenia. Physical examination reveals mental retardation, delayed speech, and microcephaly. Most likely diagnosis:
- a) Fetal alcohol syndrome
- b) Congenital herpes
- c) Congenital syphilis
- d) Fetal phenytoin syndrome
- e) Congenital CMV infection

866. A 13-year-old girl appears with a flu-like symptoms (e.g., headache, nausea, malaise), dizziness, and visual disturbance for the last few hours. She had a syncopal episode on the way to hospital. The investigation can lead to a diagnosis:
- a) Nasopharyngeal culture
- b) Urine for drug screening
- c) Serum acetaminophen level
- d) Opthalmologic examination
- e) Blood carboxyhemoglobin level

867. A 16-year-old boy appears in a ER with a visual disturbance (e.g., feeling of being in a snowstorm) for the last 3 hours. He vomited 3 times prior to arrival in ER. Physical examination reveals bilateral dilated pupils that are unresponsive to light, retinal edema, and optic disc hyperemia. The investigation can lead to a diagnosis:
- a) Blood methanol level
- b) Blood cyanide level
- c) Blood salicylate level
- d) Blood acetaminophen level
- e) Examination of urine under Wood’s lamp

868. Most common cause of acute hydronephrosis:
- a) Ureterovesicle junction obstruction
- b) Ureteropelvic junction obstruction
- c) Ureterocele
- d) Vesicoureteral reflux
- e) Polycystic kidney disease

869. A newborn is diagnosed at birth with a midpenile or proximal hypospadius. The investigation is indicated for this patient:
a) Urinalysis
b) Urine culture
c) Blood SMA 6
d) Karyotype
e) Renal scan

870. A 12-year-old boy appears with blue sclera, multiple fractures, and hyperextensible joints. The screening test is indicated for this patient:
a) Bone scan
b) Bone marrow scan
c) Hearing test
d) Opthalmologic examination
e) Hemoglobin electrophoresis

871. A 3-year-old girl appears with kyphosis and low back pain for the last 3 months. She did not gain any weight for the past 3 months. Mother denies history of trauma. The pain is persistent. Physical examination reveals kyphosis and tenderness in the thoracic region. The initial procedure of choice:
a) Reassurance
b) MRI of spine and soft tissue
c) Bone scan of spine
d) Ultrasonography of spine
e) Plain x-ray of spine

872. A pregnant mother has lupus. Most likely effect on fetus:
a) Elevated WBC count
b) Cardiac tumor
c) Elevated platelet count
d) Tricuspid insufficiency
e) Congenital heart block

873. A full term male newborn is diagnosed with polycythemia. His central hematocrit is 70. The clinical manifestations may include all of the following except:
a) Tachypnea
b) Tachycardia
c) Jaundice
d) Hypoglycemia
e) Poor feeding

874. A female child waves bye-bye, says ‘mama’ and ‘dada’, but cannot speak one word with meaning. She crawls, creeps, stands up by holding furniture but cannot walk holding onto furniture. She elevates foot on standing. She picks up pellet with an assisted pincer movement, drops object deliberately, but does not release an object to examiner. She cannot take a few sips from cup. The developmental age of this child in months:
a) 8
b) 9
c) 10
d) 11
e) 12

875. A 8-year-old boy appears with a history of fall onto an outstretched hand. Physical examination reveals a painful, red, swollen right wrist. X-ray of the right hand reveals fracture of the radius and ulna, just proximal to the wrist, distal segment displaced in dorsal and radial direction. The nerve injury is associated with this condition:
a) Radial nerve
b) Median nerve

c) Ulnar nerve
d) Brachial plexus
e) Superfical cutaneous branch supplying over the wrist

876. A 5-year-old girl appears in ER with a big left eyebrow laceration. The management should not include which of the following:
a) Shave eyebrows
b) Use 5 – 0 suture
c) Irrigate and clean the wound
d) Use 4 – 0 suture
e) Repair along the hair line

877. A 15-year-old girl appears with a history of occasional chest pain and palpitations for the last 6 months. She is a very bright student. Physical examination reveals a late systolic murmur at apex with click. The murmur is prolonged in late systole when the patient is standing or sitting condition. She also has a thoracic scoliosis: Most likely diagnosis:
a) Mitral valve prolapse (MVP)
b) Tricuspid valve regurgitation
c) Mitral valve stenosis
d) Tricuspid atresia
e) Mild aortic stenosis

878. All of the following statements are true about monitoring of anticonvulsant drug level except:
a) A good clinical judgement is more reliable in achieving seizure control than over-reliance on anticonvulsant drug monitoring.
b) Routine serum monitoring of anticonvulsant levels are recommended.
c) Serum monitoring of anticonvulsant therapy should be performed at the beginning of anticonvulsant therapy.
d) Serum monitoring of anticonvulsant therapy should be performed for noncompliant patients and their families.
e) Serum monitoring of anticonvulsant therapy should be performed for patients with accelerated growth spurts.

879. A 12-year-old boy appears in ER with history of several episodes of vomiting and watery diarrhea for the last 1 hour. He went to his friend’s house and ate lunch 2 hours age. Most likely organism:
a) Streptococcus pyogenes
b) E. coli
c) Staph. aureus
d) Salmonella
e) Shigella

880. All of the following statements are true in the diagnosis of group A beta-hemolytic Streptococci except:
a) Rapid antigen detection should be supported by culture.
b) Anti-DNase B is best serologic test for streptococcal pyoderma
c) Anti-DNase B level begins to rise immediately after infection
d) Positive throat culture in a patient with acute tonsillitis or pharyngitis is diagnostic.
e) Vigorous swabbing is important to obtain an adequate specimen.

881. A full term male newborn appears with severe watery diarrhea for the last 12 hours. Maternal history reveals polyhydramnios. He has no vomiting. SMA 6 reveals Na 130, K 3.0, Cl 80, BUN 20, and creatinine 1.0. ABG reveals pH 7.59, $PCO_2$ 39, $PO_2$ 85, 97% oxygen saturation, base excess +12.0. Stool test reveals high chloride and absence of blood. Most likely diagnosis:
a) Rotavirus
b) Milk protein allergy
c) Necrotizing enterocolitis
d) Methadone withdrawal

e) Chloride-losing diarrhea

882. Gynecomastia is a side-effect of which medication:
a) Clonidine
b) Diazoxide
c) Prazocin
d) Spironolactone
e) Captopril

883. Renal failure is a side-effect of which medication:
a) Captopril
b) Nifedipine
c) Phentolamine
d) Clonidine
e) Methyldopa

884. Treatment of choice for moderate-to-severe hypertension in neonate:
a) Diazoxide
b) Propranolol
c) Hydralazine
d) Furosemide
e) Methldopa

885. A 6-month-old female child is recovering from a rotavirus causing diarrhea. Her stools are formed. She started to take lactose-containing milk. After 24 hours, she developed severe watery stools. She was taking lactose-containing milk since birth without any problem. Clinitest reveals positive reducing substance. Stools pH are acidic on nitrazine paper. Most likely cause of second diarrheal episode:
a) Relapse of rotavirus diarrhea
b) Lactose intolerance
c) Sucrose intolerance
d) Galactose intolerance
e) Glucose–galactose intolerance

886. The hormone causing penile growth in fetus during the 2nd and 3rd trimesters:
a) Testosterone
b) Dehydrotestosterone
c) Estrogen
d) FSH
e) LH

887. A 10-month-old male infant with cystic fibrosis develops rectal prolapse. The immediate management includes all of the following except:
a) Surgical correction
b) Adequate dietary therapy
c) Control lung infection
d) Buttocks can be taped closed to prevent immediate recurrence
e) Knee-chest position and then, reduced manually by continuous gentle pressure.

888. Most common clinical manifestation of cystic fibrosis:
a) Failure to thrive
b) Abnormal stools
c) Meconium ileus
d) Nasal polyps
e) Respiratory symptoms

889. The best initial diagnostic study for a child with respiratory distress:

a) Arterial blood gas
b) Chest X-ray
c) Chest CT scan
d) Chest MRI
e) Oxygen saturation by pulse oximetry

890. Most frequent cause of neonatal seizure in full term infants:
a) Hypoglycemia
b) Hypocalcemia
c) Perinatal asphyxia
d) Hypomagnesemia
e) Methadone withdrawal

891. A 15-year-old female athlete participates intense exercise in hot summer day. The fluid is recommended to avoid dehydration:
a) Cold plain water every 15 minutes
b) Gatorade drink every 1 hour
c) Cold beer
d) Glucose water
e) Salt plus glucose water

892. A 16-year-old boy is HIV positive. He wants to participate in school sports. The true statement about HIV infection and sports:
a) HIV infected patients are not allowed to participate in contact sports.
b) HIV infected patients with skin lesions are not at risk in transmitting the disease.
c) HIV infected patients should participate in sports provided skin lesions are covered, and blood and body fluid precautions are taken.
d) HIV-infected patient should be discouraged to participate in sports in which open blood loss is a possibility.
e) HIV-infected patients should avoid all sports for the benefit of other sport participants.

893. Food anaphylaxis is mostly due to:
a) IgA
b) IgG
c) IgE
d) IgD
e) IgM

894. A 18-month-old male child appears in a clinic for a routine check up. His height, weight, and head circumferance are all way above 95 th percentiles. His mother is concerned. He is developmentally normal. His mother stated that he likes to eat all kinds of foods, drinks juice and milk. His bowel habit is normal. The appropriate recommendation for this child:
a) Reduce fat intake
b) Stop juice intake
c) Discontinue milk and juice for a few months and recheck his weight
d) Reduce cholesterol intake
e) No restriction of fat or cholesterol

895. A recently pregnant mother appears for a routine check up. She is concerned. She delivered an anencephalic newborn in her last pregnancy. The risk of this child to become anencephalic:
a) 1%
b) 4%
c) 10%
d) 25%
e) 50%

896. A 4-year-old girl appears in ER in early morning with vomiting. She did not eat properly last night due to URI symptoms. Physical examination is unremarkable. Her present weight is just below the 5th percentile. Laboratory findings reveal hypoglycemia, ketonemia, low plasma insulin, and low plasma alanine. Urinalysis reveals ketonuria. Most likely diagnosis:
a) Fasting causing hypoglycemia
b) Pancreatic islet cell tumor
c) Nonketotic hypoglycemia
d) Pancreatic cell hyperplasia
e) Ketotic hypoglycemia

897. A 2-week-old male appears in a clinic for a routine check up. Physical examination reveals white flaky plaques inside mouth, 1 cm palpable liver, and tip of the spleen is palpable. Maternal history is unremarkable except thrombocytopenia due to a preeclampsia during pregnancy. The next step in the management:
a) Reassurance
b) Oral nystatin
c) HIV testing of the newborn
d) HIV testing of the mother
e) CBC and platelet count of the newborn

898. A 4-year-old female child appears in ER with history of stridor and mild respiratory distress for the last 12 hours. Mother denies fever. Physical examination reveals tachypnea and barking cough. Most likely organism:
a) Hemophilus influenzae
b) Respiratory syncitial virus
c) Rhinovirus
d) Group A beta hemolytic Streptococcus
e) Parainfluenza virus

899. A 5-year-old boy is diagnosed with Kawasaki disease. He develops right upper abdominal pain. Physical examination reveals a tenderness below the right costal margin. Most likely diagnosis:
a) Peptic ulcer
b) Choledochal cyst
c) Hydrops of the gallbladder
d) Stone in the common bile duct
e) Unusual presentation of acute appendicitis

900. A 6-year-old girl appears in a clinic with history of not growing appropriately. Her mother noticed that she did not grow for the last 12 months. Physical examination is unremarkable except the present height is 10th percentile. One year ago her height was 50th percentile. All of the following tests are indicated except:
a) Urinalysis
b) Thyroid function test
c) CBC
d) Head CT scan
e) X-ray of hands / wrists

901. A 10-year-old boy appears in clinic with massive cervical lymphadenopathy for the last 6 months. He recently arrived in USA from an Asian country. Mother appears healthy. Father died 2 years ago secondary to an unknown infection. Physical examination reveals bilateral enlargement of cervical lymph nodes, absence of rales and rhonchi in both lungs. Chest X-ray is normal. The immediate next step in the management:
a) Ultrasonography of the mass
b) CT scan of the mass
c) MRI of the mass
d) Excisional biopsy of lymph nodes
e) PPD skin test

902. Most common cause of drug-resistant tuberculosis:
a) INH is not an effective drug.

b) Rifampin is not an effective drug.
c) Pyrazinamide is not an effective drug.
d) Inadequate treatment
e) Spontaneous point mutations in the mycobacterial genome

903. All of the following statements are true about tuberculin skin test (TST) or PPD except:
a) Prior vaccination with BCG is a contraindication to TST.
b) A 5 mm induration is considered positive in a child with HIV infection.
c) A 10 mm induration is considered positive in a child with diabetes mellitus.
d) A 15 mm induration is considered positive in a 5-year-old child
e) Erythema does not indicate a positive test.

904. The serum uric acid level is elevated in which of the following medication:
a) Ethambutol
b) INH
c) Streptomycin
d) Rifampin
e) Pyrazinamide

905. All of the following are bactericidal antituberculous drugs except:
a) INH
b) Ethionamide
c) Rifampin
d) Streptomycin
e) Pyrazinamide

906. A pregnant mother with PKU (phenylketonuria) is supposed to take low phenyl alanine diet. She is noncompliant. The least likely effects on fetus:
a) Hydrocephalus
b) Microcephaly
c) Increased risk of abortion
d) Mental retardation
e) Congenital cardiac defect

907. A full term male appears with small and deformed ears, large mouth, coloboma of the upper eyelid, hemifacial microsomia, and antimongoloid slant of palpebral fissures. Most likely diagnosis:
a) Turner syndrome
b) Goldenhar syndrome
c) Pierre-Robin syndrome
d) Hurler syndrome
e) Treacher-Collins syndrome

908. A female child appears with white forelock. Most likely diagnosis:
a) Down syndrome
b) Klinefelter syndrome
c) Sturge-Weber syndrome
d) Cri-du-chat syndrome
e) Waardenburg syndrome

909. A child is diagnosed with acrodermatitis enteropathica. Most likely deficiency of:
a) Copper
b) Zinc
c) Selenium
d) Protein
e) Fat

910. The human milk and cow’s milk differ in composition in all of the following except:
   a) Protein
   b) Whey and casein ratio
   c) Carbohydrate
   d) Calcium
   e) Fat quantity

911. A child appears with fever (102°F), skin erythema, and flaccid bullae filled with clear fluid. Physical examination reveals skin tenderness and separation of epidermis with minimal skin touching. The drug of choice:
   a) Acyclovir
   b) Penicillin
   c) Nafcillin
   d) Erythromycin
   e) Amphotericin

912. The true statement about Menkes Kinky hair syndrome:
   a) Low total body copper stores
   b) Decreased copper absorption from intestine
   c) Copper transport from intestine to plasma is normal.
   d) Autosomal dominant
   e) Normal growth and development

913. A male child appears with gross hematuria. He had URI symptoms 3 days ago. He is asymptomatic. Most likely diagnosis:
   a) Nephrotic syndrome
   b) Polycystic kidney
   c) IgA nephropathy
   d) Hydronephrosis
   e) Multicystic kidney

914. Myeloid-erythroid ratio in a patient with chronic inflammation:
   a) 1 : 1
   b) 7 : 1
   c) 2 : 1
   d) 3 : 1
   e) 4 : 1

915. A 2-day-old full term female newborn appears with poor feeding and dyspnea. Physical examination reveals blood pressure 35/20, respiratory rate 70 per minute, temperature 98.6°F, weak peripheral pulses, grayish blue color of skin, hepatomegaly, and right ventricular heave. Most likely diagnosis:
   a) Aortic stenosis
   b) Coarctation of aorta
   c) Hypoplastic right heart
   d) Hypoplastic left heart syndrome
   e) Bicuspid aortic valve

916. A 18-year-old male with Down syndrome lives independently. He went to a doctor for facial cosmetic surgery. The appropriate statement regarding management:
   a) He should bring his parents to give a consent for surgery.
   b) A Down syndrome patient does not need a cosmetic facial surgery.
   c) Surgeon should refuse to do surgery because the Down syndrome patient is mentally retarded.
   d) The congenital cyanotic heart disease should be ruled out prior to surgery.
   e) Surgeon should set up a date for cosmetic surgery.

917. A 16-year-old boy wants to use a condom. He comes to the clinic for free samples. He requested the physician, however, not to tell his parents. The next appropriate management:
  a) Physician should not give condoms until he becomes 18.
  b) Physician should give condoms but notify his parents.
  c) Physician should give condoms and should not notify his parents.
  d) Physician should discourage sexual activities.
  e) Physician should set up a conference with his parents and school teacher for his sexual activities.

918. The clinical manifestation that indicates sepsis in newborns:
  a) Hypoglycemia
  b) Hyperglycemia
  c) Hypocalcemia
  d) Hyponatremia
  e) Anemia

919. A 3-week-old full term female infant appears in ER with bloody diarrhea for the last 6 hours. She has been receiving breast milk since birth. She is active and alert. She is crying for breast milk. Physical examination reveals normal abdomen with good intestinal peristoltic sounds. The next step in management:
  a) Sepsis work up
  b) Abdominal X-ray
  c) Stool culture
  d) Intravenous hydration and keep NPO
  e) Vitamin K

920. The girlic odor is noted in a child. Physical examination reveals loss of hair and fingernails. Most likely diagnosis:
  a) Zinc deficiency
  b) Molybdenum deficiency
  c) Selenium toxicity
  d) Copper toxicity
  e) Copper deficiency

921. A 12-month-old female child appears with alternate normal and watery stools for the last 14 days. She has brown, watery stools more in the afternoon and evening. She likes to drink fruit juice. Physical examination reveals weight (50th percentile), height (25th percentile), and normal soft abdomen. Most likely diagnosis:
  a) Viral gastroenteritis
  b) Gastrocolic reflex
  c) Toddler diarrhea
  d) Rotavirus infection
  e) Food poisoning

922. First sign of puberty in males:
  a) Axillary hair
  b) Public hair
  c) Ejaculation
  d) Penile growth
  e) Testes increase in size

923. First sign of puberty in females:
  a) Breast buds
  b) Axillary hair
  c) Public hair
  d) Menstruation
  e) Enlarged clitoris

924. Most common type of child abuse and neglect:

a) Neglect
b) Physical abuse
c) Sexual abuse
d) Emotional abuse
e) Unknown

925. A 12-year-old girl appears in a clinic for a routine check up. Her mother is concerned because she has no breast buds. Physical examination is unremarkable. The next step in management:
a) Head CT scan
b) Endrocrine referral
c) Chromosome study
d) Serum FSH and LH levels
e) Reassurance

926. A 17-year-old boy appears in ER with cyanosis, respiratory depression, and convulsion. Physical examination reveals bilateral constricted pupils and rales over the lungs. Chest X-ray reveals pulmonary edema. Most likely diagnosis:
a) Cocaine use
b) Marijuana use
c) Alcohol overdose
d) Heroin overdose
e) PCP use

927. The organism may cause delayed presentation of right diaphragmatic hernia:
a) E. coli
b) Listeria
c) Pseudomonas
d) Mycoplasma
e) Group B Streptococcus (GBS)

928. Most common cause of secondary peritonitis in children:
a) Perforated stomach with ulcer
b) Necrotizing enterocolitis
c) Ruptured bile duct
d) Duodenal ulcer with perforation
e) Ruptured appendix

929. Iron absorption from gastrointestinal tract is increased by:
a) Vitamin A
b) Vitamin $B_{12}$
c) Vitamin C
d) Vitamin D
e) Vitamin E

930. Which of the following is poorly absorbed from the intestine:
a) Vitamin A
b) Vitamin D
c) Iron
d) MCT
e) Vitamin E

931. A full term female newborn is admitted in NICU with meconium aspiration. A few hours later, she developed PPHN (persistent pulmonary hypertension). The best diagnostic study for PPHN:
a) Chest X-ray
b) Hyperoxia test
c) Echocardiogram

d) Pulmonary function test
e) Arterial blood gas

932. A 4-year-old boy appears in ER with fever (104.5°F), conjunctivitis, and oral lesions. He has been suffering from a fever for the last 6 days. He refuses to eat solid foods. Physical examination reveals bilateral nonpurulent conjunctivitis, fissured lip, strawberry tongue, cervical adenopathy, erythema and desquamation of hands and feet, polymorphic but nonvesicular rash on the trunk. The preferred therapy:
a) Acetaminophen
b) Ibuprofen
c) Nafcillin
d) Acyclovir
e) Intravenous immune globulin (IVIG)

933. A group of adolescents appear in ER with a severe respiratory distress. They were going to school by train. Many adults appeared in the adult ER at the same time. A few of them developed convulsions. Physical examination revealed bradycardia, arrythmia, and hypotonia. Most likely cause:
a) Mustard gas
b) Ammonia
c) Phosgene
d) T – 2 toxin
e) Nerve agents

934. A 16-year-old boy appears in a clinic with hyperactivity, short attention span, disturbances in sleep, and bad temperament for the last 2 weeks. He was hit by a car 3 weeks ago. He went to ER and was released after evaluation. He used to be a good student prior to this episode. Most likely diagnosis:
a) Marijuana use
b) PCP use
c) Brain tumor
d) Post-traumatic syndrome
e) Problem with his girlfriend

935. A full term female newborn is delivered by forcep with Apgar scores 8 and 9 at 1 and 5 minutes respectively. Physical examination reveals a swelling over the left parietal area. X-ray skull reveals a fracture. Head CT scan reveals a 2 mm depression of the left parietal area. She is clinically asymptomatic. The next step in the management:
a) Surgery immediately
b) Observation
c) Phenobarbital prophylaxis
d) Phenytoin prophylaxis
e) Intubation and hyperventilation

936. A 3-day-old male newborn appears with bilateral purulent discharge from eyes for the last 18 hours. He was born by NSVD. Mother is nonclinic. The treatment of choice:
a) Penicillin
b) Erythromycin
c) Ceftriaxone
d) Cefotaxime
e) Amoxicillin

937. A child appears with short stature and multiple bruises. Physical examination reveals hypoplastic thumbs, café-au-lait spots, and hyperpigmented skin. Most likely diagnosis:
a) Fanconi syndrome
b) Rubinstein-Taybi syndrome
c) Congenital CMV infection
d) Fetal dilantin syndrome
e) Neurofibromatosis

938. A full term male newborn is delivered by an emergency cesarean section. Prenatal fetal monitoring reveals sinusoidal pattern. His Apgar scores are 2 and 3 at 1 and 5 minutes respectively. He is intubated and is placed on a mechanical ventilator. Most likely diagnosis:
a) Meconium aspiration
b) Group B Streptococcus infection
c) Severe fetal anemia
d) Severe RDS
e) Diaphragmatic hernia

939. A mother has an active genital (vagina) herpetic lesions. Her child was born by cesarean section and remains asymptomatic. She wants to breast feed the child. The mother should take the following precaution before breast feeding:
a) Wear face mask
b) Start acyclovir to the child
c) Clean breasts with soap water
d) No precaution is needed
e) Wash hands properly

940. A mother has an active herpetic lesions in mouth. The precaution mother should take before breast feeding:
a) Wear face mask
b) Give acyclovir to the mother
c) Give acyclovir to the baby
d) Clean breasts with soap water
e) Wash hands properly

941. A mother has an active herpetic lesions in breasts. She wants to breast feed the child. The appropriate statement:
a) Wear face mask
b) Cannot breast feed the baby
c) Wash hands properly
d) Clean breasts with alcohol swab
e) Clean breasts with soap and water

942. A newborn appears with a unilateral (left) persistent nasal discharge. Physical examination reveals a noisy breathing with the left nasal secretions. Most likely diagnosis:
a) URI
b) Foreign body
c) Sinusitis
d) Nasolacrimal duct obstruction
e) Left choanal stenosis

943. A full term female newborn appears with cyanosis at birth. Cyanosis improves upon crying. Most likely diagnosis:
a) Transposition of great arteries
b) Bilateral choanal atresia
c) Tetralogy of Fallot
d) Pulmonary agenesis
e) Hypoplastic left heart syndrome

944. A 4-year-old appears with left sided head tilt for the last 10 days. Physical examination reveals decreased lateral movement of the right eye. Most likely diagnosis:
a) Myasthenia gravis
b) Retinoblastoma
c) Posterior fossa tumor
d) Neuroblastoma

e) Fracture of the right orbit

945. A 7-day-old newborn has no goiter and thyroid function test reveals low T 4 and high TSH. Most likely diagnosis:
a) Hypoparathyroidism
b) Hyperthyroidism
c) Endemic goiter
d) Hypopituitarism
e) Thyroid agenesis of the newborn

946. A newborn appears with goiter and thyroid function test reveals low T 4 and high TSH. Most likely diagnosis:
a) Hypoparathyroidism
b) Hypopituitarism
c) Hyperthyroidism
d) Thyroid agenesis of the newborn
e) Endemic congenital hypothyroidism

947. A 3-year-old child is diagnosed with extrapyramidal (athetoid or dyskinetic) cerebral palsy. Physical examination reveals all of the following except:
a) Delayed speech
b) Mental retardation
c) Delayed fine motor
d) Delayed gross motor
e) Delayed language

948. Functional characteristic of IgE:
a) Protects from viral infection
b) Protects from fungal infection
c) Mediates allergic disease
d) Protects from bacterial infection
e) Protects from milk-protein allergy

949. A 23-week-old female fetus appears with cystic fibroma. Most likely diagnosis:
a) Down syndrome
b) Trisomy 18
c) Trisomy 13
d) Turner syndrome
e) Cri-du-chat syndrome

950. A male newborn appears with left eye leukocoria and left eye calcification. He has a family history of leukocoria. Most likely diagnosis:
a) Neuroblastoma
b) Chorioretinitis
c) Retinitis pigmentosa
d) Retinopathy of prematurity
e) Retinoblastoma

951. A 12-year-old female appears in a clinic with fever (104.8°F), severe throat pain, unable to open her mouth, refuses to eat and talk for the last 24 hours. She had acute tonsillopharyngitis a few days ago. Physical examination reveals “hot potato” voice, trismus, torticollis, enlarged left tonsil, and uvula is displaced to the right side. Most likely diagnosis:
a) Peritonsillar abscess
b) Retropharyngeal abscess
c) Epiglottitis
d) Acute tonsillopharyngitis
e) Pharyngeal muscle paralysis

952. A male child appears with sudden onset of high fever (104°F), dysphagia and throat pain. He had acute pharyngitis a few days ago. Physical examination reveals hyperextended head, gurgling respiration, drooling with progressive difficulty in breathing, absence of stridor, and bulging of the posterior pharyngeal wall. Most likely diagnosis:
a) Peritonsillar abscess
b) Retropharyngeal abscess
c) Acute tonsillopharyngitis
d) Epiglottitis
e) Tuberculosis of cervical spine

953. Most common organism of cellulitis of ear and external auditory canal:
a) Group B Streptococcus
b) Group A Streptococcus
c) Pseudomonas
d) Staph. aureus
e) Staph. epidermidis

954. A 2-month-old female infant is brought to ER with history of excessive crying for the last 3 hours. Before that, infant was fine. Physical examination reveals flushed face, distended abdomen, and cold feet. Most likely diagnosis:
a) Appendicitis
b) Obstructed inguinal hernia
c) Obstructed femoral hernia
d) Intestinal obstruction
e) Colic

955. A 14-year-old boy appears with a swelling in the left thigh. He was injured during a soccer game 7 days ago. Physical examination reveals a swollen, red, and tender left thigh. CBC reveals a drop of hematocrit from 42 to 28. Most likely diagnosis:
a) Hemophilia
b) Deep thigh hematoma
c) Rhabdomyosarcoma
d) Osteosarcoma
e) Osteomyelitis

956. A 5-year-old girl appears in ER with fever (102.5°F) and pain behind the right ear for the last 24 hours. She had history of otitis media. Physical examination reveals a swelling behind the right ear, and outward and downward displacement of the right pinna. Left ear is normal. Most likely diagnosis:
a) Chronic otitis media
b) Epidural abscess
c) Mastoiditis
d) Lymphadenitis
e) Sternomastoid muscle hematoma

957. The least likely complication of tonsillectomy:
a) Referred ear pain
b) Postoperative throat infection
c) Halitosis
d) Massive hemorrhage
e) Anesthetic complications

958. A full term female infant with IUGR (intra uterine growth retardation) is born by NSVD with a severe respiratory distress and low Apgar scores (3 and 4 at 1 and 5 minutes respectively). She was intubated and placed on a mechanical ventilator. Arterial blood gas reveals a metabolic acidosis. Most likely cause of IUGR.
a) Group B Streptococcus

b) Fetomaternal bleeding
c) Cord prolapse
d) Meconium aspiration
e) Uteroplacental insufficiency

959. A mother is concerned about her 12-month-old healthy male child’s hearing. The next step in evaluation of hearing:
a) Rule out TORCH infection
b) Tympanometry
c) Audiometry
d) Renal ultrasonography
e) Auditory evoke response test

960. A full term male newborn appears with a vesicular rash behind the left ear. He was born by NSVD. He is asymptomatic. Mother denies herpetic lesions. Most likely diagnosis:
a) Chicken pox
b) Herpes zoster
c) Benign pustular melanosis
d) Erythema toxicum neonatorum
e) Herpes simplex

961. Three newborn infants develop Staph. aureus infections in NICU within a 10-day-period. The best way to prevent the infection:
a) Strict hand-washing
b) Discontinue TPN
c) Discontinue intralipid
d) Discontinue all central lines
e) Give prophylactic antibiotics to all infants in NICU

962. A 11-month-old male infant recently arrived in USA from an Asian country. His immunization status is unknown. Mother is positive for hepatitis B surface antigen. The infant should receive:
a) Hepatitis B vaccine (3 doses within 6 months)
b) Hepatitis B vaccine (2 doses within 4 months)
c) HBIG (1 dose) and hepatitis B vaccine (2 doses within 6 months)
d) HBIG (1 dose) and hepatitis B vaccine (3 doses within 6 months)
e) Hepatitis B vaccine (1 dose)

963. A 10-year-old female appears with pain and swelling in the left leg. X-ray study reveals soft tissue swelling and absence of fracture. She has a history of trauma. The best diagnostic study to rule out a fracture:
a) Rpt x-ray after 3 days
b) CT scan
c) MRI
d) Ultrasonography
e) Radionuclide bone scan

964. A full term male newborn is delivered by NSVD. His mother has eczema. His three siblings have a eczema. His mother is concerned. The milk should be recommended to avoid eczema:
a) Soy milk
b) Goat milk
c) Cow milk
d) High calorie milk
e) Breast milk

965. A 15-year-old girl appears with macerated and inflamed areas between toes. She is an athlete. Most likely diagnosis:
a) Scabies

b) Tinea pedis
c) Tinea corporis
d) Eczema
e) Allergic reaction

966. A mother of a 10-month-girl noticed that her daughter's diaper area is always wet. She did not experience that in her 2-year-old girl. Physical examination reveals a wet vaginal area and dribbling of urine from vagina. Most likely diagnosis:
a) Ectopic ureter in uterus
b) Urogenital sinus defect
c) Vesicoureteral reflux
d) Pelvic kidney
e) Vaginal discharge due to maternal estrogen

967. Which of the following statement suggests an immunodeficient child?
a) Seven URI symptoms in the past 1 year.
b) Four episodes of otitis media in the past 1 year.
c) Oral thrush at 2½ months of age
d) Five episodes of bronchitis in winter months.
e) Three episodes of pneumonias in the past 12 months.

968. A 12-month-old girl appears with a loss of weight and repeated regurgitation of food for the last 3 months. She has no nausea, diarrhea and fever. Mother appears depressed due to a separation from her husband 4 months ago. She is unemployed. The girl does not cry prior to regurgitation episodes. She lost 24 oz over the last 3 months. Physical examination reveals a normal development, weight less than 5 th percentile, height is 25 th percentile, and head circumferance is 50 th percentile. She was fine prior to this episode.
Most likely diagnosis:
a) Rumination
b) Gastroesophageal reflux
c) Diaphragmatic hernia
d) Upper intestinal obstruction
e) Peptic ulcer

969. The side-effects of dexamethasone include all of the following except:
a) Cardiomyopathy
b) Hypertension
c) Adrenal hyperplasia
d) Hyperglycemia
e) Gastrointestinal bleeding

970. The side effect of cromolyn sodium:
a) Excessive salivation
b) Nasal congestion
c) Tachycardia
d) Hypertension
e) Transient bronchoconstriction

971. Bartter syndrome includes all of the following except:
a) Hyperkalemia
b) Hypochloremia
c) Alkalosis
d) Hyperreninemia
e) Growth retardation

972. True statements about pheochromocytoma except:
a) Autosomal dominant

b) Paroxysmal hypertension is commonly noted
c) Most common site of origin is adrenal medulla.
d) Epinephrine and norepinephrine are secreted by the tumor.
e) VMA (vanillylmandelic acid) is elevated in urine.

973. First clinical manifestation of a feminizing adrenal tumor:
a) Acne
b) Deep voice
c) Enlarged clitoris
d) Gynecomastia
e) Advanced osseous maturation

974. Physical examination of the newborn reveals a midline mass under the tongue. The mass is 1.5 cm in diameter, nonbluish, and noncystic. The next step in the management:
a) Surgical removal of the mass
b) Thyroid scan
c) MRI
d) Ultrasonography
e) CT scan

975. A 11-month-old boy came back from O.R. after surgical repair of a cleft palate. The boy is stable. His serum electrolytes are normal. The oral feeding may resume:
a) Within 6 hours after surgery
b) After 24 hours of surgery
c) After 48 hours of surgery
d) After 7 days of surgery
e) After 14 days of surgery

976. A 6-year-old boy is diagnosed to have a temper tantrum. Parents should tell the child:
a) His behavior is not tolerable.
b) He should be punished if he continues to behave improperly.
c) He should learn from his peers how to behave.
d) He should be ashamed of himself.
e) His reasons for frustration are understable, but out-of-control behavior is unacceptable.

977. A 3-year-old girl appears with a sudden onset of cough, dyspnea, and hoarseness for the last 3 hours. Mother noticed a small amount of fresh blood with mucus inside her mouth. She was playing and eating prior to this episode. Physical examination reveals a croupy cough and mild cyanosis. The appropriate management:
a) Throat culture
b) Nasopharyngeal culture
c) Remove a foreign body from esophagus
d) Remove a foreign body from larynx
e) Remove a foreign body from nasopharynx

978. A 2-year-old boy appears with a sudden onset of cough, dyspnea, and hoarseness for the last 6 hours. Mother denies fever. He was playing prior to this episode. Physical examination reveals bilateral wheezing, audible slap, and palpable thud. The appropriate step in management:
a) Throat culture
b) Nasopharyngeal culture
c) Remove a foreign body from esophagus.
d) Remove a foreign body from trachea.
e) Remove a foreign body from stomach

979. Excretory product of cocaine in urine:
a) Methyl ecgonine
b) Ethyl ecgonine

c) Benzoyl ecgonine
d) Aryl cocainamide
e) Benzoyl cocaine

980. The underlying defect in a patient with myasthenia gravis:
a) Presynaptic neuromuscular blockade
b) Neuronal atrophy
c) Muscular atrophy
d) Muscular hypertrophy
e) Postsynaptic neuromuscular blockade

981. Preferred investigative procedure for a lung mass:
a) MRI
b) Fluroscopy
c) CT scan
d) Chest x-ray
e) Pulmonary function test

982. A full term male newborn is born by NSVD with a Apgar scores 9 and 9 at 1 and 5 minutes respectively. Physical examination reveals respiratory rate 46 per minute, pulse rate 110 per minute, cyanosis of the hands and feet, pink mucous membrane and tongue, and grade 1/6 systolic murmur in the right sternal border. The next step in the management:
a) Echocardiogram
b) Chest x-ray
c) Arterial blood gas
d) Sepsis work up
e) Keep the infant under radiant wormer

983. A 2-year-old female appears in a clinic with history of poor weight gain for the last 4 months. She is active, alert, and energetic. Physical examination reveals head circumferance 25 th percentile, height 10 th percentile, and weight less than 5 th percentile. Most likely cause of not gaining adequate weight:
a) Hypothyroidism
b) UTI
c) Gastroesophageal reflux
d) Inadequate caloric intake
e) Congenital adrenal hyperplasia

984. An 8-month-old girl appears with sudden onset of abnormal flexion movements of extremities, trunk, and neck, followed by gradual relaxation. EEG reveals a hypsarrthymic pattern. The next step in the management:
a) Phenobarbital
b) Phenytoin
c) Lorazepam
d) Carbamazepine
e) ACTH (adrenocorticotropic hormone)

985. A 6-year-old male child appears with history of fever (103°F) and sore throat, then develops vomiting and diarrhea with dark brown stools. Stools have no occult blood. Physical examination reveals pale, puffy eyelids, and diffuse abdominal tenderness. Laboratory findings reveal BUN 80, sodium 128, hematocrit 36, WBC count 16,500, polymorphs 70%, lymphocytes 25%, monocytes 5%, and platelet count 246,000. Most likely diagnosis:
a) Hemolytic uremic syndrome
b) Acute appendicitis
c) Acute tonsillitis
d) Acute pharyngitis
e) Acute poststreptococcal glomerulonephritis

986. A 22-month-old girl had surgery for craniopharyngioma. Subsequently she developed hypotension and dehydration. Laboratory findings reveal serum glucose 36 mg/dL, serum sodium 120 mEq/L, serum chloride 80 mEq/L, and serum potassium 7.0 mEq/L. Most likely diagnosis:
a) Increased ADH secretion
b) Diabetes insipidus
c) Acute enteritis
d) Idiopathic hypoglycemia
e) Adrenal insufficiency

987. A male child repeats vowel sounds, sits briefly, begins separation anxiety, and prefers mother. He cannot transfer object from hand to hand. He cannot chase pellet. Most like age of this child in month:
a) 4
b) 5
c) 6
d) 7
e) 9

988. A 12-year-old female with a severe asthma is admitted for an acute appendicitis. She usually receives albuterol and prednisone. The appropriate management before surgery:
a) Intravenous theophylline
b) Intravenous hydration
c) Cromolyn sodium
d) Albuterol pump
e) Intravenous corticosteroids

989. A 12-year-old boy with asthma wants to participate in sports. The medication recommended before sports to avoid exercise-induced asthma:
a) Beta-agonist bronchodilator
b) Theophylline
c) Cromolyn sodium
d) Antihistamine
e) Corticosteroids

990. An 8-year-old boy appears for a routine check-up. Physical examination reveals height (75 th percetile), weight (above 95 th percentile), and Tanner stage I. Most likely diagnosis:
a) Hyperthyroidism
b) Hyperpituitarism
c) Adrenal hyperplasia
d) Gigantism
e) Obesity due to excessive caloric intake

991. Male internal genital organs are formed due to:
a) Presence of Mullerian-inhibiting substance (MIS)
b) Absence of Mullerian-inhibiting substance
c) Dehydrotestosterone
d) Estrogen
e) Progesterone

992. A 5-year-old girl appears in a clinic for routine check up. Physical examination reveals blood pressure 130/95, respiratory rate 22 per minute, pulse rate 100 per minute, and rest of examination is unremarkable. Mother denies UTI. However, she visited a few times in ER for fever and each time the diagnosis was a viral syndrome. Urinalysis reveals 1+ protein, no WBCs, and no RBCs. CBC reveals a normal finding. Serum SMA6 reveals K 6.5 mEq/L, bicarbonate 15 mEq/L, creatinine 1.5 mg/dL, sodium 142 mEq/L, and chloride 99 mEq/L. Most likely diagnosis:
a) Reflux nephropathy
b) Acute glomerulonephritis
c) Nephrotic syndrome

d) Essential hypertension
e) Normal

993. A 3-year-old male appears pale. CBC reveals hemoglobin 6 g/dL, hematocrit 18, MCV 60 fL, WBC 9,200, polymorphs 45%, lymphocytes 55%, platelet 450,000, and retic count 4%. He arrived in USA recently. Physical examination is unremarkable except he looks very pale. His stools are normal and absence of occult blood. Urinalysis is normal. In addition to appropriate nutrition, he needs:
a) Folic acid
b) Vitamin E
c) Intramuscular iron therapy
d) Oral iron supplementation
e) Packed RBCs transfusion

994. A 6-year-old female asthamatic is intubated for a severe asthma attack. She was kept NPO and intravenous fluid therapy. She developed two episodes of generalized tonic-clonic seizures that were controlled with two anticonvulsants. Physical examination revealed heart rate 60 per minute, respiratory rate 22 per minute, blood pressure 134/87. The next appropriate step in management:
a) Hyperventilation
b) Epinephrine drip
c) Propranolol
d) Atropine
e) Add another anticonvulsant

995. An infant is diagnosed with Alagille syndrome (intrahepatic biliary atresia). Physical examination reveals signs of rickets (e.g.,
bow legs and prominent wrists). Laboratory findings reveal a normal CBC, serum alkaline phosphatase (1400 U/L), serum Ca 6.9 mg/dL, phosphorous 2.8 mg/dL, mildly elevated SGOT and SGPT, and total bilirubin 4.0 mg/dL. The next in the management:
a) Phosphate supplementation
b) Calcium supplementation
c) Ursodeoxycholic acid
d) Total parenteral nutrition
e) Vitamin D

996. A 6-month-old boy appears in a clinic for poor weight gain. He is treated with furosemide and digoxin for a cardiac failure. The appropriate therapy:
a) Increase cereal quantity
b) Calcium supplementation
c) Give oxygen during feeding
d) MCT (medium chain triglyceride)
e) Admit in hospital and start TPN (total parenteral nutrition) for 7 to 10 days.

997. A 16-year-old boy appears in a clinic for a routine check up. Physical examination reveals an average blood pressure 145/90, respiratory rate 20 per minute, pulse rate 74 per minute, and rest of the findings are unremarkable. His father and uncle have a high blood pressure. His grandfather died of a stroke at the age of 62. His weight and height are above 95 th percentile. Laboratory test results reveal a normal CBC, SMA 6, and urinalysis. He is aware that he should control his weight and eating habits. After 1 month, repeat blood pressure is 140/90 (checked twice). Most likely diagnosis:
a) Renal artery stenosis
b) Aortic coarctation
c) Essential hypertension
d) Hyperparathyroidism
e) Normal blood pressure

998. A 10-month-old girl may be at risk to develop an atopy if she is exposed to:
a) Another child with atopy

b) URIs
c) Smoking
d) Non-allergenic formula
e) Breast feeding

999. Most common cause of profound deafness leading to cochlear implantation in children:
a) CMV
b) Rubella
c) Viral meningitis
d) Bacterial meningitis
e) Herpes

1000. Most common cause of congenital sensorineural hearing loss:
a) Herpes
b) Rubella
c) CMV
d) Toxoplasmosis
e) Syphilis

1001. Least likely complication of bronchoscopy:
a) Hypoxia
b) Bronchospasm
c) Arrythmia
d) Pneumopericardium
e) Laryngospasm

1002. A full term male infant is diagnosed with macrocephaly. Increased transillumination findings are noted in the frontal and parietal areas of the head. Family history of siblings death at birth due to a large head. Most likely diagnosis:
a) Aqueductal stenosis
b) Dandy-Walker syndrome
c) Meningomyelocele
d) Arnold-Chiari malformation
e) Intraventricular hemorrhage

1003. A full term newborn is diagnosed with hydrocephalus. Head CT scan reveals displacement of inferior vermis, medula and pons into cervical canal, narrowing and elongation of 4 th ventricle, and kinking of the brain stem. Most likely diagnosis:
a) Dandy-Walker syndrome
b) Arnold-Chiari malformation
c) Aqueductal stenosis
d) Posterior fossa tumor
e) Craniopharyngioma

1004. A 10-year-old male child who is a known diabetic on insulin appears with sweating, pallor, tremor, tachycardia, drowsiness, confusion, and seizure. Most likely diagnosis:
a) Diabetic ketoacidosis
b) Diabetes insipidus
c) Hyperglycemia
d) Insulin-induced hypersensitivity reaction
e) Insulin-induced hypoglycemia

1005. Management of a patient with insulin-induced hypoglycemia includes all of the following except:
a) Parents should give insulin injections to children younger than 12 years old.
b) Intravenous administration of 50 mL of 25% glucose
c) Glucose gel (15 g) via buccal mucosa

d) Intramuscular glucagon is given in an unconscious patient.
e) If the insulin dose is correct, reduce the dose.

1006. A 1-day-old female newborn appears with bilious vomiting. Physical examination reveals abdominal tenderness but absence of abdominal distension. Plain abdominal x-ray reveals a nonspecific finding. Vomiting continues despite antibiotic therapy. Most likely diagnosis:
a) Stress ulcer
b) Acute appendicitis
c) Malrotation
d) Hirschsprung disease
e) Hypoplastic left colon

1007. The best diagnostic method of Hirschsprung disease:
a) Barium enema
b) Upper GI series
c) Plain abdominal x-ray
d) Abdominal CT scan
e) Rectal suction biopsy

1008. The preferred therapy for a patient with true precocious puberty:
a) Testosterone
b) Dehydrotestosterone
c) Estrogen
d) Progesterone
e) Analog of GnRH (Gonadotropin releasing hormone)

1009. True statement about anorexia nervosa:
a) All socioeconomic classes are involved.
b) Patients maintain their body weight.
c) Amenorrhea may be present.
d) They do not “feel fat” when emaciated

1010. Fetal in utero treatment to induce lung maturity:
a) Growth hormone
b) Dexamethasone
c) Insulin
d) Testosterone
e) Surfactant

1011. A 4-year-old boy appears with recurrent respiratory infections, ataxia, and nystagmus. Most likely diagnosis:
a) HIV infection
b) Combined immuned deficiency
c) Wiskott-Aldrich syndrome
d) Friedreich ataxia
e) Ataxia telangiectasia

1012. Anaphylactic reaction to penicillin is due to all of the following except:
a) Penicilloate
b) Penilloate
c) Penicllenate
d) Oxidation product of penilloate
e) Benzylpenicilloyl haptenic group

1013. A 2-week-old boy with pyloric stenosis appears jaundice. The indirect hyperbilirubinemia is most likely due to:
a) Decreased enterohepatic circulation
b) Decreased level of glucoronyl transferase enzyme activity

c) Hemolysis
d) Obstruction
e) Hepatitis

1014. Cholestasis is associated with:
a) Pyloric stenosis
b) Hypothyroidism
c) Steatorrhea
d) Hypopituitarism
e) G6PD deficiency

1015. Most common organism responsible for suppurative parotitis:
a) S. aureus
b) Group A betahemolytic Streptococci
c) S. epidermidis
d) Pseudomonas
e) Nontypable Hemophilus influenzae

1016. A child appears with abrupt, symmetric skin eruptions on extensor surface of upper extremities. Skin lesions are doughnut-shaped, target-like papules with an erythematous outer border, an inner pale ring, and a dusky purple to necrotic center. The characteristic of lesions suggest:
a) Erythema nodosum
b) Erythema multiforme
c) Erythema migrans
d) Erythema infectiosum
e) Erythema toxicum neonatorum

# ANSWERS

| No. | Correct Answer | |
|---|---|---|
| 1. | (c) | Na x 2 + Gl/18 + BuN/2.8<br>136 x 2 + 90/18 + 21/2.8<br>272 + 5 + 7.5 = 284 |
| 2. | (e) | DKA means presence of ketone and glucose in the urine. Serum osomolality is elevated. |
| 3. | (b) | GBS does not infect human beta cells. |
| 4. | (a) | Sequence of abnormalities are mentioned from (a) to (e). First sign is reduced iron stores in tissue. Last sign is reduced intracellular enzyme activity. |
| 5. | (c) | Newborn is diagnosed with transposition of great vessels, therefore Rashkind baloon atrial septostomy is the initial procedure of choice. |
| 6. | (d) | Congenital rubella is associated with diabetes in later life. |
| 7. | (b) | Streptococcus pneumoniae is the most common organism. |
| 8. | (d) | Pulmonary circulation is the correct answer. |
| 9. | (b) | X-linked dominant; both males and females are affected, but males are affected more severely. Father and all his daughters are affected, but none of his sons. |
| 10. | (d) | NEC can develop if procedure is performed through umbilical vein. All other choices are long-term prognosis of polycythemia. |
| 11. | (a) | Intraoperative contamination is the most common cause. |
| 12. | (e) | Histiocytosis X does not respond to corticosteriod therapy. |
| 13. | (c) | Positive predictive value A/A + B = 5/5 + 11 = 31%. |
| 14. | (a) | Encopresis is normal up to 4 years of age. |
| 15. | (a) | CT scan and MRI are not included in Sarnat staging. |
| 16. | (b) | Fibroadenoma. |
| 17. | (e) | Drowning is the specific cause. Most common cause of prehospital pediatric cardiopulmonary arrest is due to prolonged myocardial ischemia from untreated hypoxemia or untreated shock (not due to primary cardiac cause). |
| 18. | (b) | Mixed metabolic and respiratory acidosis is the most common type. |
| 19. | (c) | Mastitis is not a contraindication in breast-feeding. Breast feeding is allowed in CMV (full term infants) but contraindicated in preterm infants. |
| 20. | (d) | Sucking and swallowing coordination appear at 34 weeks gestational age. |
| 21. | (c) | Small intestine is foreshortened. 10% of cases are associated with intestinal atresia. Uimbilical cord is attached to the abdominal wall immediately to the left of the defect. Covering sac is not found; normal abdominal cavity size. |
| 22. | (b) | Ultimate muscle mass and strength does improve with increased caloric intake and exercise. |
| 23. | (a) | Elimination of galactose from diet does not invalidate enzyme assay, irrespective of duration of elimination. |
| 24. | (e) | Fragile X-syndrome is diagnosed by DNA analysis. This syndrome is characterized by bilateral non-nodular macroorchidism and mental retardation. |
| 25. | (b) | Neurologic abnormalities are absent in VACTERL anomaly (V for vertebral, A for anal, C for cardiac, TE for tracheoesophageal fistula, R for renal and abnormal radius, L for limb). This newborn has T-E fistula. The confirmatory diagnosis is made by X-ray that reveals coiling of nasogastric tube at neck. |
| 26. | (e) | Amoxicillin is preferred therapy in acute otitis media. Other medications are not effective in acute otitis media. |
| 27. | (a) | P. multocida is the most common organism in cat-bite wound. |
| 28. | (c) | Retractile inguinal testis can be pushed down into the scrotum unlike undescended testis. |

29. (e) Osteosarcoma is the diagnosis. It is most commonly associated with retinoblastoma.
30. (b) Immunization should be given for the benefit of the child.
31. (c) The child is 12-month-old.
32. (a) Swimming lessons to children less than 4 years old are ineffective.
33. (e) Soft-tissue sarcomas can occur in children who received radiotherapy for retinoblastoma.
34. (e) PCP (phencyclidine) use.
35. (a) Autosomal dominant because generation after generation is affected. Males and females are equally affected.
36. (b) Wiskott-Aldrich syndrome is X-linked recessive. This syndrome is characterized by thrombocytopenia, eczema, and increased infections.
37. (b) Overhydration is the most common complication. Therefore, fluid should be restricted for 24 hours.
38. (e) Hemolytic uremic syndrome is the most common cause of renal failure in children. Coombs test is negative.
39. (d) Addison disease (hypofunction of adrenal) has low Na, low cl, high K, and high renin.
40. (a) In Klinefelter syndrome most cases are not associated with advanced maternal age.
41. (a) Verapamil is not used in children less than 1 year of age because it reduces cardiac output and produces hypotension and cardiac arrest.
42. (b) Negative predictive value D/C + D = 30/20 + 30 = 30/50 = 60%. Please see the page 612, item 4.
43. (e) Protein 15%, carbohydrate 55%, fat 30%.
44. (a) An asthma patient's PFT result usually reveals increased RV, functional residual capacity (FRC), and total lung capacity (TLC); decreased VC, forced vital capacity (FVC), FEV$_1$, and peak expiratory flow rate (PEFR).
45. (d) Cholangitis which presents with Charcot's triad of fever, jaundice, and abdominal pain.
46. (c) 1-10 years old need 100-75 Kcal/kg body weight.
47. (e) TAPVR because all four pulmonary veins drain into right atrium. Pulmonary veins contain oxygenated blood to right atrium. Therefore, umbilical catheter in right atrium has higher oxygen than that of umbilical arterial line.
48. (d) Double birth height at 4 years.
49. (a) Duchenne muscular dystrophy is X-linked recessive.
50. (a) DiGeorge syndrome has normal thyroid gland.
51. (c) Cesarean delivery is recommended for active herpes lesions near time of labor.
52. (e) Subcutaneous fat necrosis usually resolves within weeks to months.
53. (b) All babies should sleep in supine position except in infants with micrognathia and obstructive sleep apnea.
54. (d) Most common associated anomaly in Prune-belly syndrome is musculoskeletal (e.g., limb anomalies and scoliosis).
55. (e) Vancomycin does not cause neutropenia. Aminopyrine and phenobarbital can cause neutropenia.
56. (a) 0.25 mg/day.
57. (b) Cephalhematoma spontaneously resolve within 2 weeks to 3 months.
58. (c) 3-4 feedings per day for a 6-month-old child.
59. (b) Sensitivity A/A + C = 10/10 + 20 = 10/30 = 33%.
60. (e) A malignant form of ventricular arrythmia called torsades de pointes occurs in patients with LQT syndrome and is a cause of syncope or sudden death.
61. (a) Autosomal recessive. Only one generation of family will have disease. Here two brothers are affected.
62. (b) Infection, SIRS, sepsis, severe sepsis, septic shock, MODS, and death.
63. (c) In Noonan syndrome 25% of cases are mentally retarded.
64. (c) Cleft palate is repaired before 12 months to allow normal speech development.

65. (b) Antibiotic is not effective and is not indicated unless the patient is acutely ill in cat scratch disease. It is a self-limiting disease.
66. (a) Ramsay-Hunt syndrome is caused by herpes zoster oticus with facial paralysis. About 50% of cases, facial nerve does not recover completely.
67. (a) Symptoms does not always depend on lead level.
68. (e) In Kasabach-Merritt syndrome, bone marrow has normal platelet count.
69. (b) In botulism, nasogastric or nasojejunal feeding should be started.
70. (d) Cutaneous anthrax is most common. Anthrax vaccine cannot be given to children. Ciprofloxacin is not approved for children under 18 years of age. Erythromycin is not effective.
71. (b) Smokeless tobacco is harmful. It can cause oral lesions and cancer. It should not be used at all.
72. (c) Shoulder injury is most common.
73. (b) E. coli and Vibrio cholerae produce enterotoxin.
74. (b) IgG.
75. (e) Bruises are most common manifestation of child abuse.
76. (d) Furosemide causes deafness.
77. (c) Maternal use of phenytoin causes hypoplastic nails in a newborn.
78. (d) Cerebellar astrocytoma (juvenile pilocytic) and medulloblastoma are the most common infratentorial brain tumor between age 1-10 years.
79. (d) Scleroderma is diagnosed clinically by major criterion (proximal scleroderma) or two of three minor criteria (sclerodactyle to digits, digital pitting, and bibasilar pulmonary fibrosis).
80. (c) Elevated glycine level in CSF is more specific than plasma and urine.
81. (b) Spastic diplegia is the most common type of CP.
82. (e) Marijuana intoxication decreases short-term memory, decreases temperature, increases heart rate, decreases bronchospasm, and reduces intraocular pressure.
83. (d) In ADPKD patient, subarachnoid hemorrhage may occur from associated cerebral artery aneurysm.
84. (c) Rubella does not have atypical lymphocyte.
85. (a) S. aureus is the most common organism in nonbullous impetigo.
86. (e) Severe eye injury cases should be referred to an opthalmologist immediately.
87. (e) 7-8 oz per feeding in a 6-month-old infant is recommended.
88. (e) Specificity D/B + D = 30/6 + 30 = 30/36 = 83%.
89. (c) X-linked recessive. Only male is affected and female is a carrier; more than one generation is affected.
90. (e) In an emergency condition, the surgeon should do the procedure to save the child's life.
91. (b) Type 2B von Willebrand disease has low platelet count.
92. (c) TSST-1 is not useful because it is also produced by a normal S. aureus flora. Clinical presentation is diagnostic. Blood cultures is positive less than 5% of cases. About 33% of nonmenstrual cases do not produce TSST-1. Cultures are usually positive from the site of infection.
93. (d) Imperforate hymen is the most common cause of primary amenorrhea.
94. (e) Phosphaturic hypophosphatemia is the cause of rickets in RTA.
95. (a) Retinoblastoma is autosomal dominant.
96. (c) Ultrasonography is the definitive diagnostic study for DDH or CDH.
97. (b) Hyperthermia, acidosis, increase $CO_2$, increase ATP, and increase 2-3 DPG.
98. (b) Heart disease is most common in trisomy 18 (more than 90% of cases).
99. (e) Circumcision is indicated in UTI.
100. (b) Steroid can cause posterior subcapsular cataract.
101. (d) The child has meningitis because of high fever, lethargy, irritability, and back pain. He has no sore throat and pain in ears. His respiration is normal.
102. (e) CSF study is a confirmatory test in meningitis.

103. (e) CSF reveals elevated protein, high WBC counts, and decreased glucose levels.
104. (a) Intravenous antibiotics should be given as soon as possible. Currently, cefotaxime or ceftriaxone combined with vancomycin is recommended.
105. (d) Restricted to one half to two thirds of maintenance is recommended due to increased ADH (antidiuretic hormone) secretion.
106. (b) The child has brain tumor because of vomiting, headache, change of personality, and absence of fever. Nystagmus is a prominent sign in posterior fossa tumor.
107. (c) MRI is the best method to diagnose posterior fussa tumor.
108. (a) Surgical resection of cerebellar astrocytoma (most common posterior fossa tumor) is preferred therapy.
109. (a) Hydrocephalus and increased ICP (intracranial pressure) are usual complications.
110. (e) Sinusitis is absent in infectious mononucleosis.
111. (c) Leukocytosis is common; mild thrombocytopenia may occur.
112. (c) Antibiotic is contraindicated.
113. (e) EBV is responsible for 90% of cases infectious mononucleosis.
114. (b) Hepatic failure does not occur.
115. (e) Splenic rupture is the most dangerous complication. "Alice in Wonderland" syndrome (perceptual distortions of space and size).
116. (e) The child has salt-losing type of CAH (congenital adrenal hyperplasia).
117. (e) Corticosteroid plus sodium is the definitive therapy.
118. (a) CVS, then HLA typing or DNA analysis.
119. (a) Gonads should not be removed.
120. (b) Growth failure may occur due to renal and cardiac abnormalities.
121. (c) Oral antibiotic prophylaxis is indicated.
122. (a) Usual height is less than 10th percentile. She will grow after hormonal therapy if her height age is more than bone age. A patient with normal GH and TSH levels does not achieve normal height.
123. (c) Increased risk of Down syndrome in the offspring of a Turner syndrome patient if she is fertile.
124. (e) Bronchial foreign body should be removed as soon as possible.
125. (a) OTC deficiency is the most common type of urea cycle defects.
126. (e) 0.9% Nacl or Ringer lactate 20 mL/Kg over is given over 20 minutes in emergency phase to a patient with 10% isonatremic dehydration.
127. (a) Physician should not recommend a definite amount of given food.
128. (c) TCA (tricyclic antidepressant) can cause sudden death.
129. (d) 2% to 6%.
130. (e) 36 th week.
131. (b) Mild microcephaly is present in this syndrome.
132. (d) Catch-up growth in weight occurs about 24 months.
133. (a) A blind sweep of mouth is contraindicated.
134. (d) Ringer lactate; 0.9% Nacl 20 mL/Kg over 20 minutes. If no improvement, give another 20 mL/Kg over 20 minutes. The child has 15% dehydration.
135. (a) Double the birth weight at 5 months.
136. (c) Metatarsus adductus/varus is due to intrauterine position; resolves spontaneously in 90% of cases.
137. (e) No clear discharge. Facial paralysis develops later.
138. (c) IUGR.
139. (c) Back blows, chest thrusts, mouth open and remove foreign body. Abdominal thursts are contraindicated.
140. (a) Maternal age is not advanced in most cases.
141. (a) Diminished secretion of vasopression in diabetes insipidus.

142. (e) Acetylcholine causes bradycardia, salivation, loose stool, and miosis.
143. (d) Low hemoglobin, low MCV, and low reticulocyte count.
144. (a) Gradenigo's syndrome or petrous apicitis is a triad of otitis media, retroorbital pain, and 6th cranial nerve palsy.
145. (d) Omphalocele may be associated with trisomies (13, 18 and 21); covered with sac, small abdominal cavity; umbilical cord inserts into the sac; surgery is required.
146. (a) Enuresis is normal up to 5 years of age.
147. (b) Tardive dyskinesia is caused by neuroleptics (e.g., chlorpromazine and haloperidol).
148. (c) Type IV is most common and most severe; butterfly rash and Raynand phenomenon are present; anti-DNA is more specific and reflects degree of disease activity; anti-sm antibody does not measure disease activity; positive ANA is not specific for lupus.
149. (d) Weight for height.
150. (a) Overall accuracy A + D/A + B + C + D = 20/33 = 60.6%. Please see the page 613, item 5.
151. (c) Low phenylalanine diet should be given before conception.
152. (e) Vomiting will resolve after the obstruction is relieved by surgery.
153. (b) Growth hormone is elevated in anorexia nervosa; occurs in all socioeconomic classes; resistant to infection; hair loss during overfeeding state; hypochloremic alkalosis occur; death occurs due to electrolyte imbalance and cardiac arrythmia.
154. (c) Waardenburg syndrome patient has white forelock and congenital deafness.
155. (c) Hematuria with proteinuria indicate kidney source; hematuria means more than 5 RBC per high power field; it can occur in fever, exercise, gastroenteritis, respiratory infection, and viral infection.
156. (d) Normal CBC results.
157. (e)
158. (d) Norwalk virus is the most common cause of large explosive diarrhea from contaminated water or shellfish among older children in schools, hospitals, and cruise ships.
159. (a) Herpetic lesions in mouth and genitalia are not a contraindication to breast feeding.
160. (e) 4 Kcal protein and carbohydrate; 9 Kcal fat (long chain).
161. (d) Pure, plain, cold water is the best fluid.
162. (d) 300 calories extra i.e., 2,400.
163. (a) This is a typical presentation of lactase deficiency. It is common in premature and in children after 3 years of age.
164. (c) Valproic acid can cause spina bifida
165. (c) BPD patients usually recover by 6-12 months.
166. (a) This is a typical presentation of glucose-galactose malabsorption. The patient improves with fructose.
167. (b) Soy formula causing watery diarrhea, absence of recurrent abdominal pain, and absence of reducing substance in stool specimens are characteristic of sucrase-isomaltase deficiency. The patient improves without sucrose (Soy) containing formula.
168. (b) CT scan is the best procedure to diagnose splenic trauma.
169. (a) It is not necessary to discontinue morphine before extubation.
170. (a) Subcutaneous emphysema is the most pathognomonic sign of pneumomediastinum.
171. (c) Henoch-Schonlein purpura has normal platelet count; elevated IgA and IgM; intussuception, hematuria, and proteinuria are not present in all cases.
172. (e) Conversion disorder because it appears suddenly. The patient complains of voluntary muscle and special senses. The neurological examination is normal.
173. (b) Mother should call poison control center first. Ipecac should be given.
174. (a) The fever in excess of 41°C is rarely associated with infection. Central nervous system dysfunction that involves the hypothalamus can cause fever above 41°C.
175. (e) Hypothalamic disorder causes hyperpyrexia.

176. (d) Hypernatremic dehydration should be corrected over 48 hours; calculate at least 10% dehydration.
177. (c) Patient usually recovers while breast-feeding.
178. (e) Urine culture for CMV is the definitive diagnostic study for congenital CMV infections.
179. (b) Temperature-pulse dissociation or relative bradycardia does not occur in malaria.
180. (a) Neither disease nor immunization against pertussis provides complete and lifelong immunity against disease or reinfection.
181. (e) Submucous cleft is an associated finding.
182. (d) Tanner stage 3; areola and nipple form secondary mound in stage 4. Pubic hair is coarse in stage 4.
183. (b) Tanner stage 4; nipple projects in stage 5; pubic hair spread to medial side of thigh in stage 5.
184. (e) Tanner stage 5.
185. (c) Tanner stage 2.
186. (a) Sinusitis because symptoms persist more than 10 days, URI usually improves in 10 days; sinus pain and tenderness may be absent in children.
187. (b) This boy is normal.
188. (c) Congenital cataract results in absent retinal reflex of that eye. Retinal detachment causes white pupillary reflex. The description of forcep delivery and low Apgar scores are misleading.
189. (e) Reduce caloric intake for at least 6 months to 1 year is not easy to comply.
190. (d) Hypotension and prolonged capillary refilling time indicate decreased cardiac output.
191. (c) CSF VDRL and long bone x-ray will confirm congenital syphilis.
192. (e) Mental retardation (3% of general population) is most common.
193. (d) Thalassemia minor (normal hemoglobin, hematocrit, and reticulocyte count; low MCV).
194. (a) Vaginal foreign body.
195. (c) Hypertension screening should begin at 3 years of age.
196. (e) Abdominal ultrasonography should be performed to rule out adrenal cortical tumor with or without Cushing syndrome.
197. (a) Packed-RBC transfusion should be given for anemia.
198. (b) Start inhaled steroids and discontinue oral steroids.
199. (d) Perforation can occur in nasojejunal feeding.
200. (e) Germ cell tumor is the most common testicular tumor in adolescent and adults.
201. (c) Gentamicin may cause sensorineural hearing loss.
202. (d) 5th, 7th, and 12th cranial nerves are responsible for sucking.
203. (d) Migraine is the most common cause of headache in children.
204. (b) 9th, 10th, and 12th cranial nerves are responsible for swallowing.
205. (c) Scoliosis occurs during peak height velocity i.e., 12 years in female.
206. (c) Scoliosis occurs in 14 years in male.
207. (e) Resume iron-fortified formula because iron does not cause constipation. The infant is not constipated.
208. (a) Fluorinated steroids cause myopathy. However, glucorticoid may be used. Vitamins are not useful; no specific therapy is available.
209. (e) Fluid in the fissure and hyperinflation indicate TTNB.
210. (c) 80-100 mL/Kg/day.
211. (a) TPN-induced cholestasis is mostly due to multifactorial causes (e.g., bacterial endotoxins, specific amino acids, aluminum, copper, and manganese.
212. (e) It is a severe form of acute sinusitis but less commonly noted.
213. (b) Vitamin D should be given.
214. (e) 21-hydroxylase deficiency.
215. (d) Both cats and dogs can produce asthma.

216. (c) Foreign body in the esophagus should be removed as soon as possible.
217. (c) Delayed speech and language are the first signs.
218. (b) Hyperglycemia is due to peripheral resistance to insulin; the deleted chromosome is paternally derved; hypotonia and hypergonadism are clinical findings.
219. (b) Throat culture should be obtained from students who developed the symptoms of streptococcal pharyngitis.
220. (e) UTI should be ruled out in secondary enuresis.
221. (c) A patient with allergic rhinitis can develop asthma.
222. (e) Tissue biopsy is the definitive diagnostic test for sarcoidosis.
223. (c) Hereditary spherocytosis presents with anemia, jaundice, and spherocytes (in peripheral smear).
224. (d) Pasteurella multocida is the most common organism in cat bite wound.
225. (a) MCT is better absorbed than LCT.
226. (a) A 5-year-old can copy a triangle.
227. (b) Tanner stage 2.
228. (c) Tanner stage 3.
229. (d) Tanner stage 4.
230. (e) Tanner stage 5.
231. (e) Hyponatremic dehydration (less than 10%); Nacl deficit (135-120) x body weight x 0.6 = 180 mEq; Nacl maintenance (4 mEq/kg) = 4 x 20 = 80 mEq per day; $D_5$ water plus total 260 mEq of Nacl should be given over 24 hours; add K acetate after urine output.
232. (a) Listeria meningitis because Gram positive rod like diptheroid.
233. (d) Familial short stature.
234. (b) Head CT scan to rule out any intracranial hemorrhage.
235. (c) PPD test is indicated.
236. (a) Renal osteodystrophy is diagnosed due to low Ca, high P, high PTH, high alkaline phosphatase, and characteristic bone x-ray findings.
237. (e) Pneumococcal infection is most common in sickle cell disease.
238. (d) Varicella vaccine is recommended.
239. (e) Mild mental retardation is usually diagnosed at school entry age.
240. (d) UTI prophylaxis is not indicated in phimosis.
241. (b) RSV is the most common organism in acute bronchiolitis.
242. (a) Phenobarbital increases theophylline clearance and decreases its toxicity.
243. (b) The maximum temperature of home water heater should not exceed 125°F to avoid hot-water scalding injury.
244. (a) Bilateral acoustic neuromas are the most characteristic features of neurofibromatosis (NF-2).
245. (d) PCP pneumonia; mother died due to HIV infection.
246. (d) Normal siblings should receive penicillamine therapy to prevent disease completely or cure them. Family members require screening for presymtomatic Wilson disease.
247. (e) Galactosemia presents with hepatomegaly and Gram-negative sepsis.
248. (a) SCID patient appears with FTT, and recurrent infections (e.g., Candida albicans, Pneumocystis carinii, CMV, Epstein-Barr virus).
249. (c) Radionuclide bone scan can detect osteomyelitis early.
250. (b) Cerebral edema occurs due to rapid infusion of intravenous fluid.
251. (c) 100 Kcal/kg/day.
252. (e) 18:82.
253. (a) Spinal cord compression does not occur in scoliosis.

254. (b) IgM.
255. (a) Lithium ingestion causes decreased anion gap.
256. (c) CMV.
257. (e) Tympanic membrane.
258. (d) Height is reduced due to vertebral compression.
259. (e) Expressive language development.
260. (e) Failure to take insulin is the most common cause of DKA in adolescent children.
261. (b) Infantile botulism.
262. (e) Breast enlargement usually disappears within a few weeks.
263. (c) ABG is the most important.
264. (c) Pain medication should be given.
265. (e) Superiorly and temporally dislocation of lens occur in Marfan syndrome. In homostinuria, the lens is displaced inferiorly and nasally.
266. (c) Alcohol causes erosive gastritis.
267. (a) Congenital bicuspid aortic valve is an associated anomaly in coarctation of aorta..
268. (e) Streptococcus pneumoniae.
269. (d) Increased PT is the first sign of liver damage.
270. (b) Iron tablets are radioopaque.
271. (c) Rubinstein-Taybe syndrome patient appears with broad thumbs and broad big toes.
272. (d) Imipramine is anticholinergic, therefore it causes dry mouth.
273. (c) Histoplasmosis
274. (b) Sucking blister will disappear spontaneously.
275. (d) Duodenal atresia is common in Down syndrome.
276. (e) Turner syndrome is not mentally retarded.
277. (c) M type 4 does not cause acute rheumatic fever. M type 6 can cause acute rheumatic fever.
278. (a) Migraine.
279. (d) Ash-leaf (90% of cases, hypopigmented skin lesion).
280. (c) Scald burns (85% of total cases).
281. (e) Vitamin K dependent factors (II, VII, IX, X).
282. (e) Ionizing radiation can cause solitary thyroid nodule.
283. (b) Don’t do anything to child.
284. (c) Sturge-Weber syndrome.
285. (e) Barbiturate poisoning.
286. (e) Benign tumor.
287. (c) 50%; hemophilia is a x-linked recessive .
288. (d) Aortic valve stenosis.
289. (c) Methylphenidate can cause tics if there is a family history.
290. (a) Turner syndrome.
291. (c) 5-7 months.
292. (e) PCR (polymerase chain reaction) study and Chlamydia trachomatis culture are diagnostic.
293. (c) 60%; incidence rate: A/A + B = 60/60 + 40 = 60%.
294. (e) Aerosolized epinephrine is used, corticosteroids may be useful.
295. (d) Shaken baby syndrome.
296. (a) Breast feeding should be continued.
297. (b) Otitis media is not caused by influenza virus.

298. (c) Lyme disease.
299. (e) CMV.
300. (d) Always rule out hyperlipidemia and pre-existing liver disease.
301. (e) Calcium.
302. (a) Incidence rate of SGA in exposed group to maternal smoking: A/A + B = 120/120 + 80 = 60%. Incidence rate of SGA in non-exposed group: C/C + D = 40/40 + 160 = 20%.
    Relative risk: incidence rate of exposed group is divided by the incidence rate among non-exposed group = 60% / 20% = 3%.
303. (c) Spiral fracture.
304. (d) D-antigen.
305. (e) VSD can be present in any newborn.
306. (d) Wrestling.
307. (c) Firearm injuries and deaths are most common.
308. (d) Munchausen by proxy syndrome.
309. (c) Facial or 7 th cranial nerve.
310. (e) Odds ratio: (A x D)/(B x C) = (30 x 40)/(20 x 10) = 6.
311. (c) Ampicillin plus gentamicin.
312. (a) Febrile seizure.
313. (e) TSH.
314. (e) IgE.
315. (c) Fecal incontinence.
316. (b) Streptomycin.
317. (a) Oral deferoxamine should not be used. Ipecac-induced emesis may be useful to remove tablets from the stomach.
318. (d) Neuroblastoma.
319. (e) von-Willebrand disease.
320. (a) Pulmonic stenosis.
321. (e)
322. (d)
323. (c) BBTD.
324. (b) VZIG should be given to the baby. If the mother develops chicken pox within 5 days before and within 2 days after delivery.
325. (d) Type 6 and 11.
326. (c) Irrigation with antibiotic-containing solution is not recommended.
327. (e) Cervical x-ray to rule out atlantoaxial subluxation.
328. (a) Autosomal recessive.
329. (c) 18-month-old.
330. (e) Breast-feeding jaundice.
331. (d) Cyclosporine.
332. (c) IV calcium gluconate.
333. (e) Dysarthria does not occur.
334. (e) Chronic granulomatous disease.
335. (a) Selective IgA deficiency.
336. (b) Incidence rate among exposed group: A/A + B = 300/300 + 200 = 60%; incidence rate among non-exposed group: C/C + D = 100/100 + 400 = 20%. Attributal risk = 60% - 20% = 40%.
337. (c) Alanine is decreased.

338. (d) Decorticate posture.
339. (b) 3 years of age.
340. (b) Retinoblastoma.
341. (e) TAR syndrome.
342. (e) A functional systolic murmur over pulmonary area may be present. Please see the page 21, item 71.
343. (e) Re-examination of around 2 months after initial therapy because most patients become effusion free by 2 months of age.
344. (d) Elevated T4 and T3; decreased TSH.
345. (e) Burn less than 10% of body surface.
346. (e) Decrease theophylline by half.
347. (c) Breast milk contains low iron, low calcium, low phosphorus, low vitamin K, and high cholesterol.
348. (c) Vaccine should not be given in gluteus muscle.
349. (c) 9-15 months of age.
350. (e) Right optic tract.
351. (e) At least two retroviral drugs should be changed.
352. (a) Periodic breathing that is normal.
353. (e) Serum glucose concentration to rule out hypoglycemia or stress hyperglycemia
354. (e) Excessive solid food intake can cause obesity due to high calories.
355. (e) Fracture clavicle usually heals within 2 weeks.
356. (a) Croup.
357. (d) Hypochloremic metabolic alkalosis is present.
358. (c) CMV causes sensorineural hearing loss.
359. (a)
360. (d) Cerebral edema and convulsion.
361. (a) Oral rehydration therapy.
362. (b) 20-30 hours per week.
363. (b) Nitric oxide maintains systemic blood pressure.
364. (e) Muscle biopsy.
365. (a) No antibiotic is necessary unless a specific diagnosis is made.
366. (e)
367. (c) Parvovirus B19 infection causes hydrops fetalis.
368. (e) Testicular atrophy.
369. (c) CMV seropositive pregnant mothers have a low risk of delivering a child with CMV.
370. (e) Normal retina.
371. (c) Middle-ear deafness.
372. (c) Klebsiella pneumonia causes bulging fissure.
373. (d) Ethanol consumption.
374. (a) G6PD deficiency.
375. (b) Take unrestricted fluids.
376. (b) Double the birth weight at 5 months of age.
377. (c) Double the birth height at 4 years of age.
378. (d) The boy is normal.
379. (b) Elevated PCO$_2$.
380. (a) Hematoma in the left thigh.
381. (e) MRI.

382. (b) 4%.
383. (c) Most full-term and preterm infant pass meconium within 48 hours.
384. (d) Selenium.
385. (e) Cholesterol level less than 170 mg/dL is normal.
386. (e) Out-toeing resolves spontaneously.
387. (e) Rubella virus does not cause Bell’s palsy.
388. (d) It is five times half-life.
389. (a) Calcuria.
390. (c) Upper GI series demonstrates malposition of the ligament of Treitz. Barium enema demonstrates malposition of the cecum but is normal in 10% of cases.
391. (e) Physiologic pubertal gynecomastia.
392. (b) 46, XX.
393. (d) Weight loss may result in 5-10 mm Hg reduction in blood pressure.
394. (e) Cardiac abnormalities.
395. (b)
396. (b) Cow’s milk has low vitamin D.
397. (a) Heat illness.
398. (c) Wilms tumor.
399. (e) Habit cough.
400. (d) Expansion of intravascular volume.
401. (a) Pseudomonas.
402. (c) Ankle.
403. (e) Congenital aortic stenosis.
404. (e) Beta-hemolytic Streptococci.
405. (e) INH does not cause hypoadrenalism.
406. (c) A transient urticarial rash is not a contraindication to vaccination.
407. (d) Congenital heart block.
408. (b) Catamenial pneumothorax.
409. (d) Methemoglobinemia does not improve with oxygen therapy.
410. (e) Cystitis.
411. (a) Adenoidectomy is not indicated in recurrent acute otitis media.
412. (e) Intravenous cefoxitin plus PO or IV doxycycline.
413. (d) Bezoar.
414. (e) Extrahepatic biliary atresia.
415. (a) URI.
416. (c) S. epidermidis.
417. (d) Selective IgA deficiency.
418. (a) Brain grows 12 cm in 1st year.
419. (c) Normal fat.
420. (e) Gonococcus.
421. (a) High-risk when there is a balanced translocation between chromosomes 14 and 21.
422. (e)
423. (e) Glucose intolerance.
424. (e) Loss of hearing.
425. (a) Anterior cruciate ligament injury occurs with sudden jumping.

426. (d) Common migraine.
427. (e) Vertical transmission from mother
428. (e) Confined in a room for 48 hours
429. (b) VSD
430. (b) Oral contraceptives
431. (e) Decrease the dose by 10%
432. (c) Reduction of number of infections
433. (d) Refer to a ENT doctor.
434. (d) Early screening inventory (3-6 years of age)
435. (e) Moderate exercise is contraindicated.
436. (d) MGCS is 7.
437. (c) Cataract.
438. (a) Isovaleric acidemia.
439. (a) Correct respiratory acidosis before metabolic acidosis
440. (c) Desipramine.
441. (e) Ultrasonography.
442. (a)
443. (c) Intussuception.
444. (d) MMR should be given
445. (c) X-linked recessive
446. (d) Epidural hematoma.
447. (b) Syncope.
448. (c) Acidosis.
449. (e) Diffusing capacity of carbon monoxide
450. (b) Renal failure with CNS damage. Zinc deficiency causes acrodermatitis enteropathica.
451. (a) Subglottic hemangioma.
452. (c) DiGeorge syndrome.
453. (a) May cause CNS damage.
454. (c) Cerebellar astrocytoma (15%), medulloblastoma (15%), and brainstem glioma (15%).
455. (d) Trisomy 13.
456. (a) Decreased cardiac output.
457. (d) Influenza vaccine and yellow fever vaccines contain egg protein.
458. (d) 25%.
459. (b) Macrocephaly.
460. (e) Functional murmur.
461. (d) Normal vaginal discharge.
462. (b) Naloxone or Narcan should be given for morphine intoxication.
463. (c) Hyperactivity.
464. (a) Dietary history is not helpful.
465. (e) Surgical intervention is indicated after 9-12 months of adequate rehabilitation.
466. (e) Intracerebral bleeding.
467. (a) Nocturnal LH pulses.
468. (d) S. epidermidis.
469. (b) Trisomy 18.
470. (d) Delayed puberty.

471. (b) High PIP.
472. (a) Erythromycin.
473. (b) Streptococcus pneumoniae.
474. (d) IgM-ISAGA.
475. (c) Paranasal sinusitis.
476. (b)
477. (c)
478. (d) Cardiac, mitral valve prolapse.
479. (c) Type III.
480. (e) Congenital renal disease.
481. (e) ACTH.
482. (a) Hepatoblastoma.
483. (e) Fragile x-syndrome.
484. (e) IgE.
485. (c) Amphotericin B.
486. (a) Coxsackievirus A16
487. (d) Viral infection.
488. (c) Foramen ovale usually close by 3 months of age.
489. (a) Hematuria (gross or microscopic).
490. (e) Family member has AIDS
491. (d) Adenoma
492. (c) 6%. The risk to offspring of a diabetic parent is 2-5%, but the risk is higher when father has diabetes.
493. (b) Wilson disease.
494. (c) No therapy is indicated.
495. (a) Early placental separation.
496. (a) Sodium is a growth factor.
497. (a) Insulin is a growth factor for a fetus.
498. (e) Both have similar calories, water and solid contents.
499. (a) Erythroblastosis fetalis is not a contraindication.
500. (b) Sotos syndrome.
501. (b) Normal.
502. (a) Fitz-Hugh-Curtis syndrome.
503. (e) Recurrent URI.
504. (a) Bilious vomiting.
505. (d) Toxoplasmosis.
506. (c) Folic acid deficiency.
507. (e) Talk to the patient and his parents
508. (b) No therapy is indicated.
509. (b) Chorionic villous sampling.
510. (e) Lipoteichoic acid-peptidoglycan complex
511. (e)
512. (a) Tell parents to allow normal physical activities.
513. (b) Between 13-14 years.
514. (d)
515. (c) Dehydrotestosterone.

516. (e) II, VII, IX, X.
517. (b) Hydrocephalus.
518. (c) C7-T1.
519. (a) Inhaled albuterol.
520. (d) Rotavirus.
521. (a) Recurrent bacterial vaginosis due to a foreign body.
522. (e) Prone position in infants is indicated in patients with reflux because supine and side positions cause more reflux.
523. (e) TDF.
524. (d) Cardiomegaly.
525. (c) Fever.
526. (b) Topical or systemic antibiotic is used for a secondary bacterial infection of the excoriated lesions. Lindane should not be used for premature infants, and persons with known seizure disorders, and persons with hypensensitivity to lindane. Environmental disinfestation is not indicated but vacuuming of home is recommended for a patient with crusted scabies. Prophylactic therapy is recommended for household members. Children should be allowed to return to school or child care after completion of therapy.
527. (a) IUGR.
528. (c) Observation. Correction is not indicated if the rotation is less than60 degrees from the midline.
529. (c) O(+).
530. (c)
531. (b)
532. (e) Aneuploidy (missing or extra chromosome)
533. (a) Within the 1st hour
534. (e) Joint fluid analysis is the best diagnostic method.
535. (e) Retrobulbar neuritis is not visible by an opthalmoscopic examination.
536. (b) Otorrhea.
537. (c) Pseudomonas.
538. (b) Idiopathic nephrotic syndrome that required prednisone therapy.
539. (d) Pheochromocytoma.
540. (a) Fallopian tube.
541. (d) Amnioinfusion.
542. (e)
543. (b) Wilson disease.
544. (e) Betamethasone and dexamethasone.
545. (d) Initially obstructive, then restrictive lung disease.
546. (d) Remove umbilical arterial catheter
547. (e)
548. (d) Rhabdomyosarcoma.
549. (c) Propranolol causes hypoglycemia.
550. (c) To hold the baby now
551. (e) Sodium valproate.
552. (b) Transient renal failure.
553. (b) 25 to 45 gm.
554. (c) At 10 years.
555. (b) SMR 2 at 11 years.
556. (e) Gymnastic.

557. (c) 11 beta-hydroxylase deficiency causes hypertension.
558. (a) Surprisingly, about 30% of pedestrian injuries occur in a marked crosswalk.
559. (e) Bone age.
560. (e) Pseudomembranous colitis.
561. (b) S. penumoniae
562. (d) Tricuspid regurgitation.
563. (e) Soy protein allergy.
564. (a) PKU.
565. (e) Late metabolic acidosis.
566. (b) Both an undescended testis and a normal testis can turn into malignancy. Surgical correction cannot prevent malignancy. A close follow-up does not decrease the incidence of malignancy.
567. (b) Audiologic evaluation is indicated to rule out hearing loss.
568. (d) Alport syndrome has sensorineural deafness.
569. (b) Chylothorax.
570. (e) Familial hypophosphatemia.
571. (e) Reassurance only.
572. (c) Anemia of prematurity.
573. (b) High phosphate cow’s milk depresses serum Ca.
574. (a)
575. (b) High $PCO_2$ increases ICP.
576. (e) Hashimoto or autoimmune or lymphocytic thyroiditis.
577. (a) Autosomal dominant.
578. (e) The boy needs oxygen by bag and mask. The infant usually improves with that therapy.
579. (d) DTaP. For children after their 7th birthday, tetanus immunization should consist of DT (adult-type diptheria and tetanus toxoids).
580. (d) IV corticosteroids during the perioperative period is the appropriate management.
581. (e) Testicular feminization syndrome.
582. (e) Pseudomonas aeruginosa.
583. (b) Hypopituitarism.
584. (c) Physiologic vaginal discharge.
585. (e) Congenital absence of depressor angularis oris muscle
586. (d) Hydralazine.
587. (b) Erythromycin.
588. (a) Prostaglandin.
589. (c) Corticosteroid.
590. (a) The child should have a normal life.
591. (c) 4%.
592. (e) A ratio of pleural protein to serum protein is less than 0.5.
593. (b) Shigella.
594. (a) Brain.
595. (a) Brain.
596. (d)
597. (b) Malignant melanoma.
598. (c) Alcohol causes hypoglycemia.
599. (c) Thalassemia minor.

600. (e) Compensated respiratory acidosis.
601. (e) No currently recommended vaccines contain penicillin or its derivatives.
602. (d) Morphine.
603. (b) Cardiomyopathies.
604. (d) Phenobarbital.
605. (b) Lorazepam or diazepam or midazolam.
606. (e) Chorionic villi biopsy (CVS).
607. (c) Foreign body in esophagus.
608. (e) Tunnel vision and normal pupils suggest hysterical blindness.
609. (b) Transient hypoparathyroidism.
610. (c) Head CT scan.
611. (a) Craniopharyngioma.
612. (d) Diabetic cardiomyopathy
613. (b) Laparatomy is indicated for an intestinal perforation.
614. (c) Esophageal perforation can occur accidentally during the insertion of a orogastric tube.
615. (c) Corporal punishment is not allowed. The effect of corporal punishment is inconclusive.
616. (d) Brain abscess.
617. (a) Elevated gammaglobulin levels in serum.
618. (e) Deficiency of essential fatty acids, therefore, give intralipid.
619. (d) 6-7 years.
620. (e) A severe perinatal asphyxia causes severe metabolic acidosis.
621. (a) There should be no restriction of fat or cholesterol for infants younger than 2 years because of high energy requirements for their rapid growth.
622. (c) 44%.
623. (b) Tissue thromboplastin.
624. (e) Riley-Day syndrome.
625. (d) Child abuse.
626. (a) First day.
627. (e) Physician has failed to give maintenance Nacl to this newborn.
628. (a) Increased ADH secretion (SIADH) occurs due to meningitis.
629. (d) 32 weeks gestational age.
630. (c) A defect in 3rd and 4th pharyngeal pouch cause DiGeorge syndrome.
631. (a) Acid alpha-glucosidase. (Acid maltase)
632. (e) Varicella. HIV-infected children should also receive hepatitis B, pneumococcal, and haemophilus influenzae type b vaccines. Mild to moderate HIV-infected children can receive varicella vaccine.
633. (a) C2 deficiency causes pneumococcal infection.
634. (b) Subdural effusion.
635. (e) Positional.
636. (d) Wilms tumor has no calcification or rarely causes calcification.
637. (e) Erythema migrans.
638. (c) E. coli
639. (e) The tick embeds its head into skin.
640. (d) Sweat chloride test should be repeated after a few weeks of age.
641. (e) A well-controlled diabetic patient should have normal growth and development.
642. (d) Penicillin prophylaxis.

643. (a)
644. (b) Obstructed right inguinal hernia.
645. (e) Dexamethasone can cause rebound fever after the last dose.
646. (c) Initially lorazepam followed by phenytoin
647. (e) Reassurance
648. (e) Vertical transmission from HIV-infected mothers
649. (d) Insulin is decreased.
650. (a) Blindness does not occur.
651. (e) Nelson syndrome.
652. (e) Asymptomatic.
653. (a) Asymptomatic.
654. (c) Neural tube defects.
655. (b) Down syndrome patients do not have mitral valve prolapse.
656. (e) Learning difficulty
657. (b) HPV.
658. (a) Chlamydia infection.
659. (b) Meningococci is not detected by CIE.
660. (a) P.M. dose of insulin controls the A.M. blood sugar.
661. (c) Decrease the P.M. dose of regular insulin (correct answer).
662. (a) Otitis media.
663. (a) Sinus aspirate.
664. (b) ‘ABO’ hemolytic disease has spherocytes in peripheral blood smear.
665. (d) Zinc.
666. (a) Vitamin A toxicity. Acute vitamin A toxicity can cause papilledema and cranial nerve palsy like pseudotumor cerebri.
667. (c) Wound culture is not indicated.
668. (d) Chicken pox occurs after herpes zoster infection.
669. (e) EBV.
670. (e) Hodgkin’s disease. Reed-Sternberg giant cells (i.e. multiple or multilobulated nuclei) are also present in non-Hodgkin’s lymphoma and infectious mononucleosis.
671. (a) Chlamydia trachomatis.
672. (c) Zinc deficiency.
673. (c) Hepatobiliary scan.
674. (a) Interalveolar vessels.
675. (b) 2 years of age.
676. (d) Autism.
677. (d) Bruton disease. The serum concentration of total immunoglobulin is less than 100 mg/dL.
678. (d) Body mass index (weight/stature squared in Kg per meter squared).
679. (b) Lipid deficiency.
680. (e) TPN.
681. (e) Normal findings.
682. (e) Renal abnormality.
683. (e) Vivid dreams.
684. (e) Head CT scan to rule out a fracture.
685. (c) Pseudotumor cerebri.

686. (a) Chlamydia trachomatis.
687. (b) Phage group II.
688. (c) Vagus nerve.
689. (d) Diphenhydramine.
690. (b) Delayed fine motor.
691. (c) S. epidermidis.
692. (e) 12th cranial nerve (glossopharyngeal).
693. (a) Do not use cholestyramine in pseudomembranous colitis.
694. (a) Leukopenia.
695. (e) No renal disease.
696. (c) Decreased fibrinogen.
697. (e) Between 3 to 4.
698. (e) Protamine sulfate.
699. (a)
700. (b)
701. (c)
702. (c) Indomethacin is contraindicated in patients with bleeding disorder, NEC, oliguria (less than 1 mL/kg/hr), elevated creatinine level (more than 1.8 mg/dL), and thrombocytopenia (less than 50,000/mm$^3$).
703. (e) BPD; elevated pH, PCO$_2$, and HCO$_3$.
704. (a) Normal.
705. (c)
706. (e) Pityriasis rosea.
707. (a) Elimination of prenatal smoking reduces the risk of SIDS. However, it is not related to increased birth weight of infants whose mothers quit smoking.
708. (c) Hydrocephalus and increased ICP
709. (d) Mycoplasma pneumoniae. Recurrence may be triggered by drugs (e.g., sulfonamide, NSAIDs, phenytoin) and an infection by a herpes simplex virus.
710. (d) Stool cultures are not indicated for all exposed and asymptomatic children.
711. (c) Pneumothorax causes restrictive lung disease.
712. (a) Emphysema causes obstructive lung disease.
713. (a) Hypertension.
714. (c) Bleeding can occur due to a deficiency of vitamin K dependent factors.
715. (c)
716. (a)
717. (e)
718. (b)
719. (b) HIV DNA PCR.
720. (e) Phenytoin.
721. (a) Phenobarbital.
722. (b) RSV.
723. (e)
724. (d) Unilateral renal agenesis is most common anomaly.
725. (e)
726. (c) Brain DNA.
727. (a) Perineal fistula
728. (d) Phosphatidylglycerol

729. (e) Sagittal sinus thrombosis.
730. (c) Enterotoxigenic E. coli.
731. (e) Swallowed-blood syndrome.
732. (b) 2-month-old.
733. (e) lower limit of normal WBC count, low polymorphs, low ANC, low platelet count, normal hemoglobin, and normal hematocrit. Hematologic pictures of (a) may indicate an infection, (b) indicates a normal finding, (c) may indicate necrotizing enterocolitis, and (d) indicates polycythemia.
734. (d) Contamination of specimen with blood will not alter L:S ratio 2:1 or more because maternal and fetal blood L:S ratio is about 1:4.
735. (a) Cardiac arrythmia.
736. (c) She passes stool on time
737. (a) Infant’s heart rate reactivity to fetal movement.
738. (b) Osteogenesis imperfecta
739. (d) Streptococcus pneumoniae.
740. (a) Continue breast feeding every 3 hours.
741. (e) New injury.
742. (c) Oral hydration therapy without parenteral fluid
743. (c) 50%. Neurofibromatosis is a autosomal dominant.
744. (a) T3.
745. (d) Pertussis.
746. (c) Vitamin E deficiency can occur in a patient with biliary atresia resulting in cerebellar ataxia, posterior column abnormalities, and peripheral neuropathy.
747. (c) Phencyclidine intoxication causes hallucination, euphoria, ataxia, nystagmus, and emotional lability. Hallucination may result in distortion of body image and panic reaction.
748. (c) Pork
749. (b) Streptococcus viridans.
750. (d)
751. (b) Pseudomonas aeruginosa.
752. (a) S. aureus.
753. (d) Increased lymphocyte, increased protein, decreased glucose
754. (e) Protein (20%), fat (50%), carbohydrate (30%)
755. (a) 0-3 months.
756. (b) MMR.
757. (e) Bone age.
758. (e) Normal for his age.
759. (b) 6-7 years.
760. (b) Laser therapy.
761. (e) Give baby back to mother until stops crying, then examine him.
762. (c) Pseudohyponatremia. Serum sodium is low because of high glucose. The blood specimen was drawn from the same hand in which intravenous fluid was running.
763. (e) Subconjunctival hemorrhages resolve spontaneously.
764. (b) S. epidermidis.
765. (c) Hypospadius is repaired between 6-12 months.
766. (c) Cleft lip is repaired at 3 months of age.
767. (a) 45, X/46, XY
768. (b) 12-24 months.

769. (a) Streptococcus pneumonia other organisms are Mycoplasma and Chlamydia.
770. (b) Streptococcus pneumoniae.
771. (e) Laboratory error. Serum sodium is low but chloride is normal.
772. (e) Retropharyngeal abscess.
773. (e) Wilms tumor.
774. (b) Serum alpha fetoprotein level is decreased in cirrhosis in early childhood, trisomy 18, trisomy 21, IUGR (intra uterine growth retardation), and incorrect gestational age estimate.
775. (e) Serum alpha fetoprotein level is increased in open neural tube defects, omphalocele, gastroschisis, cystic hygroma, congenital nephrosis, polycystic renal disease, amniotic bands, epidermolysis bullosum, hydrops with ascites, threatened abortion, Kell or Rh sensitization, retroplacental hemorrhage, multiple gestation, ectopia cordis, more advanced gestational age than expected, and some maternal diseases (e.g. viral hepatitis, liver cancer, yolk sac tumors, lupus anticoagulant).
776. (d) Baley scales of infant development.
777. (e) RSV can cause wintertime epidemics.
778. (c) Milk products or egg.
779. (c) Sensorineural hearing loss is due to genetic, congenital infectious (e.g. CMV, toxoplasmosis, syphilis, rubella), ototoxic drug (e.g. gentamicin), traumatic, autoimmune, and idiopathic causes.
780. (b) Conductive hearing loss is due to perforated ear drum (e.g. otitis media, trauma), tympanostomy tube, tympanosclerosis, cholesteatoma (acquired), ossicular damage (e.g., trauma, infection, cholesteatoma), masses in the middle ear or ear canal (e.g., rhabdomyosarcoma, salivary gland tumors, glomus tumors, Langerhan’s cell histiocytosis), otosclerosis, osteogenesis imperfecta, and fibrous dysplasia.
781. (d) Chondrosarcoma and liver cancer are radioresistant.
782. (d) REM sleep.
783. (b) More active and alert.
784. (e) ADHD.
785. (c) The child is usually hypoactive.
786. (e) Optic neuritis.
787. (c) Gamma chain.
788. (e) Alpha 2, beta 2.
789. (b) Beta chain.
790. (e) Decreased glutathione in RBCs.
791. (a) A first few hours are important.
792. (b) Vitamin K.
793. (a) Alpha 2, gamma 2.
794. (d) Stevens-Johnson syndrome.
795. (b) Erythema nodosum.
796. (b) Thromboxane A2 level is increased.
797. (c) Antihypertensives are usually safe.
798. (c) Large molecules are safer than smaller molecules.
799. (e)
800. (d) DNA analysis.
801. (a) Neuroblastoma does not manifest with hemihypertrophy
802. (e)
803. (c) Salt-and-pepper appearance of retina is found in rubella and syphilis.
804. (b) Influenza vaccine is not indicated in patients with chronic sinusitis
805. (d) Epiglottitis.
806. (a) Genetic short stature.

807. (b) Constitutional short stature.
808. (d) Hypothyroidism.
809. (a) Brain.
810. (d) Lymphatic.
811. (e) Liver.
812. (c) Genitalia.
813. (b) Thymus.
814. (c) Blood Volume.
815. (e) Subcutaneous fat.
816. (a)
817. (e) Congenital rubella infection.
818. (c) Growth hormone deficiency.
819. (c) Respiratory acidosis.
820. (c) Respiratory alkalosis.
821. (b) Metabolic acidosis.
822. (e) Combined respiratory and metabolic acidosis.
823. (e) Normal.
824. (c) Sickle cell disease.
825. (a) Sickle cell trait.
826. (b) Thalassemia major.
827. (e) Iron deficiency anemia.
828. (d) Hemoglobin SC disease.
829. (a) Thalassemia (alpha) trait.
830. (d) Sickle beta thalassemia.
831. (a) No special diet is recommended.
832. (d) Normal.
833. (e)
834. (a) Rotavirus vaccine
835. (b) IPV vaccine is given if she is traveling to an endemic area
836. (d) Testicular feminization syndrome
837. (e) CAH
838. (a) Clostridium perfringens type C
839. (b) Abdominal x-ray is diagnostic of NEC.
840. (e) Eeutachian tube dysfunction or obstruction
841. (a) Intravaginal torsion is the most common type in children.
842. (c)
843. (b)
844. (d)
845. (e) Trichomonas vaginitis. Monial infection manifests as cheesy white plaques on an erythematous vaginal mucosa and a thick white-yellow discharge.
846. (b) Phenytoin.
847. (c)
848. (a) S. aureus.
849. (d)
850. (d) Transverse myelitis.

851. (a) Guillain-Barre syndrome.
852. (b) Genetic.
853. (c) Sural nerve biopsy is diagnostic.
854. (d) Acetylcysteine.
855. (e) Sodium bicarbonate is used to maintain pH 7.45-7.55 to treat and prevent dysrythmias. If unresponsive, then use lidocaine.
856. (a) Methylene blue.
857. (d) Pregnancy test.
858. (a)
859. (d) SMR 4 (60% of cases).
860. (e) Elbow injury can compromise radial, ulnar, and median nerves.
861. (e) Multifactorial.
862. (c) Circulation defect.
863. (c) 45, X/46, XY (has Y chromosome)
864. (d) Cystic fibrosis.
865. (e) Congenital CMV infection.
866. (e) Carbon monoxide poisoning.
867. (a) Methanol toxicity.
868. (b) UPJ obstruction.
869. (d) Karyotype.
870. (c) Hearing test is indicated in osteogenesis imperfecta.
871. (e) X-ray of thoracis spine.
872. (e) Congenital heart block.
873. (b) Tachycardia is absent.
874. (c) 10 months.
875. (b) Colles fracture can cause median nerve injury.
876. (d) Don’t use 4-0 suture.
877. (a) MVP.
878. (b) Routine serum monitoring of anticonvulsant levels are not recommended because practice is not cost effective.
879. (c) Food poisoning due to S. aureus because the onset of symptom was 1 hour ago.
880. (c) Anti-DNase B level begins to rise 4 to 6 weeks after infection.
881. (e)
882. (d) Spironolactone.
883. (a) Captopril.
884. (c) Hydralazine.
885. (b) Lactose intolerance can develop after recovering from acute enteric infection.
886. (e) LH causes 2nd and 3rd trimesters penile growth.
887. (a) Occasionally, surgical correction is required.
888. (e) Respiratory symptoms.
889. (b) Chest x-ray.
890. (c) Perinatal asphyxia.
891. (a) Cold plain water.
892. (c)
893. (c) IgE.

894. (e)
895. (b) 4%.
896. (e)
897. (b) Oral nystatin. Mildly enlarged liver and spleen are normal for his age.
898. (e) Parainfluenza virus.
899. (c) Hydrops of the gallbladder is a complication of Kawasaki disease.
900. (d) Urinalysis is performed to rule out UTI. Thyroid function test is performed to rule out hypothyroidism. CBC is performed to rule out an infection. X-ray of hands/wrists is performed to detect the bone age. Head CT scan is not indicated because she has no history of vomiting, nausea, headache, and visual difficulties. Physical examination did not reveal papilledema.
901. (e) Scrofula (i.e., tuberculosis of superficial lymph nodes).
902. (d) Inadequate treatment or monotherapy is the most common cause.
903. (a) Prior vaccination with BCG is not a contraindication to TST.
904. (e) Pyrazinamide.
905. (b) Ethionamide is a bacteriostatic drug.
906. (a) Hydrocephalus does not occur.
907. (b) Goldenhar syndrome.
908. (e)
909. (b) Zinc.
910. (e)
911. (c)
912. (a)
913. (c) IgA nephropathy.
914. (b) Increased to 5:1 to 10:1 (normal 2:1 to 4:1).
915. (d)
916. (e)
917. (c)
918. (b) Hyperglycemia.
919. (e) Vitamin K deficiency in breast milk.
920. (c) Selenium toxicity.
921. (c) Toddler diarrhea. Sorbitol and fructose can cause diarrhea. Sorbitol is a nonabsorbable sugar and is present in apple, pear, and prune juices. Apple and pear juices contain higher amount of fructose than glucose. White grape juice is preferred.
922. (e)
923. (a) Breast buds.
924. (a) Neglect.
925. (e) Normal.
926. (d) Heroin overdose.
927. (e) GBS.
928. (e) Ruptured appendix.
929. (c)
930. (e) Vitamin E.
931. (c) Echocardiogram.
932. (e) IVIG and high-dose of aspirin should be given in patients with acute Kawasaki disease.
933. (e) Nerve agents.
934. (d) Post-traumatic syndrome.

935. (b) Observation. However, severe skull depression should be elevated to avoid cortical injury.
936. (c) Gonococcal opthalmitis.
937. (a) Fanconi syndrome.
938. (c) Severe fetal anemia causes sinusoidal pattern.
939. (e) Hand washing is extremely important.
940. (a) Mother should wear a face mask.
941. (b) Breast feeding is contraindicated.
942. (e) Left choanal stenosis.
943. (b) Bilateral choanal atresia.
944. (c) Posterior fossa tumor involving sixth cranial nerve.
945. (e) Thyroid agenesis of the newborn.
946. (e) Endemic congenital hypothyroidism.
947. (b) Normal intelligence and problem solving.
948. (c) IgE mediates allergic disease.
949. (d) Turner syndrome.
950. (e) Retinoblastoma.
951. (a) Peritonsillar abscess.
952. (b) Retropharyngeal abscess.
953. (b) Group A Streptococcus.
954. (e) Colic.
955. (b) Deep thigh hematoma.
956. (c) Mastoiditis.
957. (d) Massive hemorrhage is rare.
958. (e) Uteroplacental insufficiency causes IUGR.
959. (e) Auditory evoke response test
960. (e) Herpes simplex. Mother may not present with active lesions.
961. (a) Strict hand washing.
962. (d) Infants younger than 12 months of age who have close contact with primary care giver with acute hepatitis B infection should receive HBIG (1 dose) and hepatitis B vaccine (3 doses within 6 months).
963. (e) Radionuclide bone scan is the best diagnostic study.
964. (e) Exclusive breast feeding in first 6 months may delay the onset of atopic diseases.
965. (b) Tinea pedis.
966. (a) Ectopic ureter connecting into either uterus or vagina.
967. (e) Immunodeficient children develop recurrent pneumonias and/or meningitis.
968. (a) Rumination. More common in males than females.
969. (c)
970. (e) Transient bronchoconstriction.
971. (a) Hypokalemia.
972. (b) Hypertension is mostly sustained.
973. (d)
974. (b) Ectopic thyroid.
975. (a)
976. (e)
977. (d) Foreign body inside larynx.
978. (d) Foreign body inside trachea.

979. (c) Benzoyl ecogonine.
980. (e)
981. (c)
982. (e) Peripheral cyanosis is due to hypothermia. Grade 1/6 murmur is a normal finding.
983. (d) A healthy girl did not gain weight due to inadequate calorie intake.
984. (e) Infantile spasm is treated with ACTH and glucocorticoids.
985. (e) Acute poststreptococcal glomerulonephritis. In hemolytic uremic syndrome hematocrit and platelet are decreased.
986. (e) Hyponatremia and hyperkalemia indicate adrenal hypofunction.
987. (c) 6 months old.
988. (e) The patient who receives steroids regularly should receive intravenous steroid before surgery to avoid hypotension.
989. (a) Beta-agonist bronchodilator.
990. (e) Obesity is due to increased caloric intake.
991. (a) Presence of MIS.
992. (a) Reflux nephropathy. She developed high BP due to recurrent UTIs. She has high K, high creatinine, and low bicarbonate.
993. (d) Oral ferrous sulfate.
994. (a) Asthama with cerebral edema.
995. (e) Hepatic rickets are more common in extrahepatic biliary atresia than intrahepatic biliary atresia due to decreased absorption of vitamin D secondary to lack of bile salts. Hepatic rickets are treated with Vitamin D.
996. (d) MCT.
997. (c) Essential hypertension.
998. (c) Exposure to smoking may increase the risk of atopy.
999. (d) Bacterial meningitis.
1000. (c) CMV.
1001. (d)
1002. (a) Aqueductal stenosis.
1003. (b) Arnold-Chiari malformation.
1004. (e) Insulin-induced hypoglycemia.
1005. (a) Children 10-year-old and older should be able to give their own injections. Parents should know how to give glucagon and should supervise when the patient draws up insulin into syringe. Children should eat adequately. Children should not exercise excessively.
1006. (c) Malrotation.
1007. (e) Rectal suction biopsy.
1008. (e)
1009. (a)
1010. (b) Dexamethasone.
1011. (e) Ataxia telangiectasia.
1012. (e)
1013. (b)
1014. (c) Steatorrhea.
1015. (a) S. aureus.
1016. (b) Erythema multiforme.

1. The most important preventable cause of blindness in the world is:
   a) Glaucoma
   b) Retinoblastoma
   c) Optic nerve glioma
   d) Eye injury
   e) Trachoma

2. A 6-year-old boy with Down syndrome is diagnosed to have acute appendicitis. Anesthesiologist may require the following investigation prior to general anesthesia:
   a) Echocardiogram
   b) EKG
   c) Lateral neck x-ray
   d) Upper GI series
   e) Barium enema

3. The number of feedings required per day at 1 year of age is:
   a) 1 – 2
   b) 3 – 4
   c) 5 – 6
   d) 7 – 8
   e) 9 – 10

4. Williams syndrome is due to the deletion of one elastin allele located in chromosome:
   a) 7
   b) 11
   c) 15
   d) 19
   e) 23

5. An 11-year-old girl with systemic juvenile rheumatoid arthritis appears with fever, lymphadenopathy, and hepatosplenomegaly. The blood test reveals anemia, leukopenia, and thrombocytopenia. This is most likely due to:
   a) Viral syndrome
   b) Macrophage activation syndrome
   c) Hemolytic anemia
   d) Spleen failure
   e) Disseminated intravascular coagulation

6. Parent-infant bonding should be initiated:
   a) Immediately after birth
   b) 1 hour after birth
   c) 15 minutes after birth
   d) Before birth
   e) After discharge from the hospital

7. The characteristic skin lesions of Pseudomonas are:
   a) Erythema multiforme
   b) Erythematous nodule
   c) Pustular melanosis
   d) Cellulitis
   e) Ecthyma gangrenosum

8. Which first-line agents are preferred in treating seizures secondary to hypoxic-ischemic encephalopathy (HIE):
   a) Benzodiazepines
   b) Paraldehyde
   c) Phenytoin
   d) Phenobarbital
   e) Propofol

9. Body mass index (BMI) should be calculated starting at age:
   a) 6 months
   b) 1 year
   c) 2 years
   d) 3 years
   e) 4 years

10. The following statement is **not** true about child abuse:
   a) Children younger than 2 years should have skeletal survey.
   b) The physician is legally obligated to report the incident.
   c) If the parents refuse hospitalization, emergency court order is not indicated.
   d) Other children baby-sat by abuser should be examined within 24 hours.
   e) Child should be admitted if the diagnosis is not clear.

11. Mode of inheritance of HDR syndrome is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

12. The first sign noted in patients with abetalipoproteinemia is:
   a) Loss of deep tendon reflexes
   b) Loss of vision
   c) Hypotension
   d) Cardiac failure
   e) Edema

13. A female child was diagnosed to have selective IgA deficiency. She suffered from an anaphylactic reaction after a blood transfusion that was properly matched. The appropriate blood for her transfusion should be:
   a) Rh (−)ve
   b) O (−)ve
   c) O (+)ve
   d) AB (−)ve
   e) Washed erythrocytes

14. A male child lives in a shelter. He has atopic dermatitis. Most serious viral infection in atopic dermatitis is:
   a) Cytomegalovirus
   b) Rhinovirus
   c) Rubella
   d) Rubeola
   e) Herpes simplex virus (HSV)

15. The following statement is **not** true about urine culture:
   a) In a catheterized specimen, urine colony count is significant if it is 1,000 organisms/mL or greater.
   b) In a clean-catch (midstream voided) specimen, urine colony count is significant if it is 100,000 organism/mL or greater.
   c) In a suprapubic specimen, any bacterial growth is significant.
   d) A urine specimen collected by placing a bag on the perineum is not acceptable because of contamination.
   e) Urine specimens should be delivered to the laboratory within 2 hours of collection.

16. The last dose of hepatitis B vaccine should not be given before age:
   a) 2 months
   b) 3 months
   c) 4 months
   d) 5 months
   e) 6 months

17. The best diagnostic clue of pulmonary tuberculosis (TB) is:
   a) Isolation of Mycobacterium tuberculosis

b) Positive chest x-ray results
c) Positive PPD test results
d) Mother has active TB
e) Father has active TB

18. The following statement is **not** true about the diagnosis of pulmonary TB in children:
a) Negative cultures exclude the diagnosis of TB.
b) Early morning gastric aspirate is the best specimen for younger children.
c) Sputum specimens are the best for older children and adolescents.
d) Three consecutive morning gastric aspirates yield the organisms in less than 50% of cases.
e) The culture yield from bronchoscopy is less than that of gastric aspirates.

19. A child appears with systemic lupus erythematosus (SLE)-like syndrome without characteristic SLE serology. Most likely complement deficiency is:
a) C 5
b) C 6
c) C 7
d) C 8
e) C 1q

20. The following treatment in spinal cord injury improves the motor outcome:
a) Methylprednisolone
b) Intravenous immunoglobulin (IVIG)
c) Vigorous physiotherapy
d) IV antibiotics
e) Spinal splint

21. Phosphorus moves into the intracellular space resulting in hypophosphatemia in the following condition:
a) Metabolic acidosis
b) Metabolic alkalosis
c) Respiratory alkalosis
d) Respiratory acidosis
e) Compensated metabolic alkalosis

22. The physician noted pink to dark brown staining in diapers during a routine newborn physical examination. Most likely diagnosis is:
a) Phenylketonuria (PKU)
b) Homocystinuria
c) Hemolytic jaundice
d) Nephrotic syndrome
e) Congenital erythropoietic porphyria (CEP)

23. The daily amount of intralipid required in preterm infants to prevent essential fatty acid deficiency is:
a) 0.5 mg/kg
b) 1.0 mg/kg
c) 1.5 mg/kg
d) 2.0 mg/kg
e) 2.5 mg/kg

24. In newborns with polycythemia, highly elevated viscosity is due to:
a) Large number of RBCs
b) Reduced plasma volume
c) Reduced capillary size
d) Reduced number of capillaries
e) Decreased deformability and filterability of RBCs

25. The best growth chart indicator in patients with acute malnutrition is:
a) Body mass index (BMI)
b) Body weight

c) Length
d) Head circumference
e) Weight-for-height

26. The following growth indicator may appear relatively normal in patients with chronic severe malnutrition:
a) Weight-for-height
b) Weight
c) Length
d) Head circumference
e) Cognitive development

27. The diagnosis of an umbilical arterial thrombus in a preterm newborn is usually made by:
a) Thrombocytopenia
b) Leukopenia
c) Aortogram
d) Aortic ultrasonography
e) Unable to draw blood from the umbilical arterial line

28. Most common organism causing cervicitis is:
a) Herpes simplex virus
b) E. coli
c) C. trachomatis
d) Group B streptococci
e) Mycoplasma hominis

29. Most frequent humoral immunologic abnormality in patients with ataxia-telangiectasia is:
a) Elevated IgA level
b) Selective absence of IgA
c) Elevated IgE level
d) Elevated total IgG level
e) Elevated IgM level

30. Inhaled glucocorticoid therapy can cause dysphonia in patients with asthma. The cause of dysphonia is:
a) Vocal cord myopathy
b) Fungal infection in vocal cord
c) Vocal card paralysis
d) Pharyngitis
e) Laryngitis

31. Most common side effects of inhaled glucocorticoids are oral thrush and dysphonia. The cause of oral thrush formation is:
a) Local immunosuppression
b) Dry mouth
c) Excessive salivation
d) Herpes simplex virus
e) Infectious mononucleosis

32. A 2-week-old boy appears with nonbilious vomiting. He is being treated with oral erythromycin. Most likely diagnosis is:
a) Gastritis
b) Enteritis
c) Duodenal atresia
d) Allergic reaction
e) Infantile hypertrophic pyloric stenosis

33. Most common organism responsible for acute hemorrhagic conjunctivitis is:
a) Enterovirus 70
b) Enterovirus 71
c) Coxsackievirus B2
d) Echovirus 4
e) Herpes simplex virus

34. Neonatal lupus results from maternal transfer of the following antibodies:
    a) Anti-Ro IgM antibodies
    b) Anti-Ro IgA antibodies
    c) Ro-IgA antibodies
    d) Anti-Ro IgG antibodies
    e) Ro-IgG antibodies

35. Reye hepatic encephalopahty can occur due to use of the following medication:
    a) Acetaminophen
    b) NSAIDs
    c) Phenytoin
    d) Phenobarbital
    e) Aspirin

36. An infant of a diabetic mother (IDM) appears with hypoglycemia is mostly due to:
    a) Increased glucagon secretion
    b) Islet cell tumor
    c) Hyperinsulinemia
    d) Hypoinsulinemia
    e) Maternal reduced intake of glucose in the third trimester

37. Gonadoblastoma may occur in the following condition:
    a) Down syndrome
    b) Turner syndrome
    c) Trisomy 18
    d) Trisomy 13
    e) Klinefelter syndrome

38. A girl with Turner syndrome developed some form of masculinization. Her mother is worried because her daughter might develop gonadoblastoma. The following screening test is indicated:
    a) ESR
    b) Urinalysis
    c) CBC
    d) Look for X chromosome material
    e) Look for Y chromosome material

39. A child is admitted in a pediatric intensive care unit (PICU) after a motor vehicle accident. The mother is acting very hostile towards the PICU staff. The appropriate way to handle the situation is:
    a) Transfer the patient to another facility
    b) Let the mother decide about the medical management in order to make her happy.
    c) Ignore the mother and concentrate on patient care
    d) Only allow father to talk to the PICU staff because he is a nice person.
    e) Extensive discussion and counselling for the mother may be useful.

40. Most common cause of severe mental retardation is:
    a) Chromosomal disorder
    b) Genetic syndrome
    c) Perinatal causes
    d) Postnatal causes
    e) Unknown

41. Most common cause of all mild mental retardation is:
    a) Genetic syndrome
    b) Chromosomal disorder
    c) Perinatal causes
    d) Postnatal causes
    e) Unknown

42. Biological causes of mild mental retardation includes all of the following **except**:
    a) Excessive fetal movements
    b) Maternal drug use
    c) Perinatal insults
    d) Sex chromosomal abnormalities
    e) Genetic syndromes with multiple minor congenital anomalies

43. Most common cause of hypovolemic hyponatremia in children is:
    a) Increased ADH secretion
    b) Diabetes insipidus
    c) Diabetes mellitus
    d) Gastroenteritis
    e) Meningitis

44. A child was treated with baking soda for an upset stomach. Most likely complication is:
    a) Hyponatremia
    b) Hypernatremia
    c) Hypokalemia
    d) Hyperkalemia
    e) Metabolic acidosis

45. Most common cause of hypernatremia in hospitalized patients is:
    a) Iatrogenic
    b) Diabetes insipidus
    c) Diabetes mellitus
    d) Prolactinoma
    e) Food contains high sodium for growth

46. A child is being treated for hypernatremic dehydration. Suddenly, she develops seizures. Most likely cause of seizure is:
    a) Movement of water from serum into brain cells
    b) Movement of water from brain cells into serum
    c) Movement of sodium from serum into brain cells
    d) Movement of sodium from brain cells into serum
    e) Increased ADH secretion

47. In hypernatremic dehydration, a rapid correction results in seizures due to:
    a) Idiogenic osmoles inside the brain cells
    b) Decreased size of brain cells
    c) Rupture of brain cells
    d) Increased size of the ventricles
    e) Intraventricular hemorrhage

48. During therapy for hypernatremic dehydration, the goal is to decrease the serum sodium by:
    a) Less than 12 mEq/L/day
    b) More than 12 mEq/L/day
    c) Less than 10 mEq/L/day
    d) Less than 5 mEq/L/day
    e) Less than 3 mEq/L/day

49. A 5-day-old girl appears for a routine physical examination. She is receiving breast milk. Mother is worried. The child had 5 loose, greenish-yellow stools containing mucus for the past 2 days. The next step in management is:
    a) Admit the child for observation
    b) Admit the child for hydration therapy
    c) Obtain stool culture
    d) Admit the child for sepsis work up
    e) Reassurance only

50. A 16-month-old boy refuses to ear properly. His mother stated that he was eating properly up to 12 months of age. She started a part time job 2 months ago. She is extremely concerned. The boy is very active. The next step in management is:

a) Provide high caloric food
b) Reduce milk intake
c) Reduce juice intake
d) Force feeding is indicated
e) Reassurance only

51. Hungry bone syndrome can occur in the following condition:
a) After thyroidectomy
b) Hyperthyroidism
c) Osteoclastoma
d) Osteosarcoma
e) After removal of parathyroid glands

52. All of the following professionals participate in genetic counseling **except**:
a) Hospital administrator
b) Physician
c) Nurse
d) Genetic counselor
e) Medical geneticist

53. During genetic counseling, choices for reproduction are decided by the:
a) Physician
b) Nurse
c) Genetic counselor
d) Medical geneticist
e) Family

54. A child appears with metabolic acidosis. Basic laboratory tests should include all of the following **except**:
a) Urinalysis
b) Serum electrolytes
c) Serum glucose
d) Liver enzymes
e) BUN and creatinine

55. Mode of inheritance in adrenoleukodystrophy is:
a) Autosomal recessive
b) X-linked
c) Autosomal dominant
d) Single gene mutation
e) Multifactorial

56. Best diagnostic study to detect the carrier of adrenoleukodystrophy is:
a) Elevated of VLCFA in RBCs
b) Elevated levels of VLCFA in plasma
c) Cultured skin fibroblast
d) Chromosome study
e) Mutation analysis

57. Best diagnostic study to diagnose patients with adrenoleukodystrophy is:
a) Elevated levels of VLCFA in plasma and RBCs
b) Elevated levels of cholesterol in plasma
c) Decreased levels of VLCFA in plasma and RBCs
d) Decreased levels of triglyceride in plasma
e) Decreased levels of cholesterol in plasma

58. Prenatal diagnosis of affected male fetus with adrenoleukodystrophy is made by:
a) Elevated VLCFA levels in cultured amniocytes
b) Decreased VLCFA levels in chorionic villus cells
c) Prenatal ultrasonography performed by an expert

d) Fetal hyperactivity in utero
e) Fetal seizure activities in utero

59. Most common cause of anaphylaxis noted in emergency department is:
a) Medication allergic reaction
b) Aerosol allergic reaction
c) Food allergic reaction
d) Insecticide allergic reaction
e) Pesticide allergic reaction

60. Listeria monocytogenes is sensitive to all of the following antibiotics **except**:
a) Cephalosporins
b) Ampicillin
c) Gentamycin
d) Vancomycin
e) Erythromycin

61. Best single drug of choice for an uncomplicated listeria infection is:
a) Ampicillin
b) Gentamycin
c) Vancomycin
d) Erythromycin
e) Trimethoprim-sulfamethoxazole

62. Best drug of choice for a severe listeria infection is:
a) Ampicillin
b) Gentamicin plus vancomycin
c) Vancomycin
d) Vancomycin plus erythromycin
e) Ampicillin plus gentamicin

63. Most common cause of metabolic acidosis in children is:
a) Vomiting
b) Renal tubular acidosis
c) Kidney failure
d) Sepsis
e) Diarrhea

64. All of the following are basic mechanisms of metabolic acidosis **except**:
a) Decreased excretion of acid by the kidney
b) Increased excretion of acid by the kidney
c) Loss of bicarbonate from the body
d) Addition of acid to the body (endogenous)
e) Addition of acid to the body (exogenous)

65. Most common initial manifestation of childhood cerebral form of adrenoleukodystrophy (ALD) is:
a) Hyperactivity
b) Seizures
c) Visual disturbances
d) Difficulty in using telephone
e) Impaired spatial orientation

66. All of the following conditions cause fetal bradycardia (heart rate less than 120 beats/minute) **except**:
a) Fetal hypoxia
b) Mother receiving beta blocking agents
c) Fetal infection
d) Heart block
e) Mother receiving local anesthetic agents

67. All of the following conditions cause fetal tachycardia **except**:
    a) Early fetal hypoxia
    b) Maternal fever
    c) Fetal anemia
    d) Maternal hyperthyroidism
    e) Maternal use of sympatholytic agent

68. The most accurate assessment of gestational age in first trimester is:
    a) Femoral length
    b) Biparietal diameter
    c) Abdominal circumference
    d) Crown-rump length
    e) Chest circumference

69. The most accurate assessment of gestational age in the second trimester is:
    a) Femoral length
    b) Biparietal diameter
    c) Abdominal circumference
    d) Crown-rump length
    e) Chest circumference

70. The most accurate assessment of gestational age at term is:
    a) Genital size
    b) Biparietal diameter
    c) Chest circumference
    d) Crown-rump length
    e) Abdominal circumference and femoral length

71. Most nosocomial infections in neonatal intensive care unit (NICU) is associated with:
    a) Intravascular catheter
    b) Heel sticking
    c) Blood pressure monitoring
    d) Endotracheal suctioning
    e) Use of same stethoscope on many patients

72. Best method used to reduce nosocomial infection in NICU is:
    a) Handwashing
    b) Wearing gloves
    c) Wearing gown
    d) Wearing shoe covers
    e) Wearing mask

73. All of the following statements are true **except**:
    a) Use of gloves reduces need for handwashing.
    b) Handwashing reduces nosocomial infection.
    c) Handwashing should be performed before entering the NICU.
    d) Handwashing should be performed before each patient contact.
    e) Antimicrobial soap or alcohol-based preparation is effective.

74. The best diagnosis study to detect calcium disorder in children is:
    a) Total serum calcium
    b) X-ray of long bones
    c) Calcium phosphorus ratio
    d) Total serum phosphorus
    e) Ionized calcium

75. A child is diagnosed with hypoalbuminemia. Her total serum calcium level is normal. Most likely associated finding that may be missed is:
    a) Hypocalcemia

b) Hypercalcuria
c) Hypomagnesemia
d) Hypercalcemia
e) Hypermagnesemia

76. The following statement is **not** true about Williams syndrome:
a) Supravalvular aortic stenosis is present in about two third of patients.
b) This syndrome is due to deletion of chromosome 7.
c) Most children have mild to moderate psychomotor retardation.
d) Narrowing of pulmonary arteries, renal arteries, and cerebral blood vessels may be present.
e) Hypercalcemia is diagnosed during infancy and resolves within a couple of years.

77. The most common cardiovascular anomaly in Williams syndrome is:
a) Supravalvular aortic stenosis
b) Pulmonic stenosis
c) Subvalvular aortic stenosis
d) Hypoplastic left ventricle
e) Supravalvular aortic dilatation

78. Most common cause of hypercalcemia in Williams syndrome is:
a) Hyperparathyroidism
b) Hyperthyroidism
c) Increased calcium absorption
d) Increased calcium mobilization from bones
e) Unknown

79. A 15-year-old boy recently immigrated into America. He has an outgoing "cocktail party" personality but also seems nervous. He appears with an elongated face, full cheeks, and thicker lips but a decrease in both the periorbital fullness. Most likely diagnosis is:
a) Fetal alcohol syndrome
b) Williams syndrome
c) Noonan syndrome
d) Down syndrome
e) Klinefelter syndrome

80. An infant appears with periorbital fullness, full cheeks, long philtrum, anteverted nares, broad nasal bridge, and an open mouth. Physical examination reveals an absence of heart murmur. Laboratory findings reveal normal CBC, normal electrolytes, and high serum ionized calcium. Most likely diagnosis is:
a) Hyperthyroidism
b) Hyperparathyroidism
c) Fetal phenytoin syndrome
d) Hyperpituitarism
e) Williams syndrome

81. A newborn appears with multiple seizures within the first few hours of life. Multiple anticonvulsant medications have failed to control seizure activities. Most likely enzyme deficiency in this patient is:
a) Isovaleryl CoA dehydrogenase
b) Glutamic acid decarboxylase
c) Glutathione synthetase
d) Cystathionine synthase
e) Tyrosine hydroxylase

82. The deficiency in brain and spinal fluid in patients with pyridoxine (vitamin $B_6$) dependency with seizures is:
a) Gamma aminobutyric acid
b) Ornithine
c) Argininosuccinic acid
d) Glutamic acid
e) Pyruvic acid

83. Appropriate therapy for patients with pyridoxine dependency with seizures is:
    a) Cyanocobalamine
    b) Ascorbic acid
    c) Vitamin $B_6$ (1 – 4 mg/kg)
    d) Vitamin $B_6$ (5 – 9 mg/kg)
    e) Vitamin $B_6$ (10 – 100 mg/kg)

84. The maternal occupational limit of exposure to radiation for the entire 40 weeks of pregnancy is:
    a) 10 mrad
    b) 100 mrad
    c) 200 mrad
    d) 500 mrad
    e) 1,000 mrad

85. Therapeutic abortion is recommended when maternal radiation exposure exceeds:
    a) 500 mrad
    b) 1,000 mrad
    c) 5,000 mrad
    d) 10,000 mrad
    e) 25,000 mrad

86. CNS (central nervous system) damage such as microcephaly, intrauterine growth retardation, mental retardation is caused at these radiation dosages:
    a) 5,000 – 10,000 mrad
    b) 10,000 – 15,000 mrad
    c) 15,000 – 20,000 mrad
    d) 20,000 – 50,000 mrad
    e) Unknown

87. All infants should receive vitamin K at birth. Additional vitamin K is indicated in all of the following conditions **except**:
    a) Breast-fed infant
    b) Steatorrhea
    c) Formula-fed infant
    d) Prolonged antibiotic therapy
    e) Prolonged diarrhea

88. An adolescent is admitted for encephalopathy. He is comatose and occasionally responds to commands. Physical examination reveals irregular breathing, decorticate posturing, and deviation of eyes. Most likely clinical staging of encephalopathy is:
    a) 1
    b) 2
    c) 3
    d) 4
    e) 5

89. A child is admitted for encephalopathy. She is lethargic but follows commands. Physical examination reveals normal breathing, muscle tone, and pupillary response to light. Most likely clinical staging of encephalopathy is:
    a) 1
    b) 2
    c) 3
    d) 4
    e) 5

90. A 16-year-old boy is admitted for encephalopathy. He is intubated and comatose. He has no response to pain. Physical examination reveals absence of spontaneous breathing, no pupillary response to light, and absent tendon reflexes. Most likely clinical staging of encephalopathy is:
    a) 1
    b) 2
    c) 3

d) 4
e) 5

91. A child is admitted for encephalopathy. She is combative and follows commands inconsistently. Physical examination reveals hyperventilation, sluggish pupillary response to light, and inconsistent tendon reflexes. Most likely clinical staging of encephalopathy is:
a) 1
b) 2
c) 3
d) 4
e) 5

92. A 14-year-old girl is admitted for encephalopathy. She is comatose and responds only to pain. Physical examination reveals irregular breathing, weak pupillary response to light, and decerebrate posturing. Most likely clinical staging of encephalopathy is:
a) 1
b) 2
c) 3
d) 4
e) 5

93. Most common site of necrotizing enterocolitis (NEC) is:
a) Proximal jejunum
b) Distal jejunum
c) Distal colon
d) Proximal ileum
e) Distal ileum

94. The greatest risk factor for NEC is:
a) Oral formula feedings
b) Breast milk
c) E. coli infection
d) Prematurity
e) Perinatal asphyxia

95. A preterm infant was diagnosed with NEC. Blood culture was obtained. Ampicillin and gentamicin were started. In most patients with NEC, blood culture usually yields:
a) No pathogen
b) E. coli
c) Rotavirus
d) Clostridium perfringens
e) Staphylococcus epidermidis

96. The triad of NEC is:
a) Prematurity, breast milk, and pathogenic organism
b) Postmaturity, formula feedings, and pathogenic organisms
c) Prematurity, oral formula feedings, and intestinal ischemia
d) Full term, oral formula feedings, and intestinal ischemia
e) Intestinal ischemia, oral formula feedings, and pathogenic organisms

97. A 19-year-old pregnant mother likes all-night dance parties. She took methylenedioxymetamphetamine (MDMA, ‘X’, Ecstasy) routinely before and during pregnancy. The most likely fetal defect is:
a) Pulmonary
b) Gastrointestinal
c) CNS
d) Cardiac
e) Chromosomal anomaly

98. The following statement is **not** true about lung function abnormalities in asthma:
a) Peak flow morning-to-afternoon variation less than 20%

b) Spirometry reveals low (forced expiratory volume) $FEV_1$
c) Spirometry reveals $FEV_1/FVC$ (forced vital capacity) ratio is less than 0.8
d) Inhaled beta 2-agonist improve $FEV_1$ 12% or more
e) Exercise causes worsening in $FEV_1$ 15% or more

99. The most common cause of anaphylaxis occurring in the hospital is:
a) Food
b) Oral medications
c) Fire ants
d) Idiopathic
e) Intravenous medication and latex

100. A 9-year-old boy was treated in the ER (emergency room) for an anaphylactic reaction secondary to insect sting. He improved significantly within 1 hour. His mother wants to take him home as soon as possible. The child should be observed in the ER for an least how many hours:
a) 1 hour
b) 2 hours
c) 3 hours
d) 4 hours
e) 6 hours

101. Pediatric autoimmune neuropsychiatric disorders (PANDAS) is associated with the following organisms:
a) Streptococcus pyogenes
b) Staphylococcus aurius
c) E. coli
d) Herpes simplex virus
e) Pseudomonas

102. A 17-year-old boy is allergic to penicillin. He is diagnosed with acquired syphilis. The best method to treat this patient is:
a) Ceftriaxone
b) Cefotaxime
c) Erythromycin
d) Azithromycin
e) Desensitization followed by penicillin

103. The following statement is **not** true about syphilis:
a) The concentration 0.018 microgram/mL (0.03 U/mL) of pencillin is toxic in all age groups.
b) Jarisch-Herxheimer reaction occurs in 15–20% of all patients who are treated with penicillin.
c) T. pallidum is not becoming resistant to penicillin.
d) The patient who develops Jarisch-Herxheimer reaction should be treated with penicillin.
e) Penicillin is the drug of choice for treatment of syphilis.

104. The diagnosis of neurosyphilis is made by all of the following **except**:
a) Neurologic symptoms
b) Increased WBC counts in CSF
c) Increased protein in CSF
d) Increased glucose in CSF
e) Positive CSF VDRL

105. The papular-purpuric “gloves and stocks” syndrome (PPGSS) is most likely due to:
a) Parvovirus B19
b) Herpes simplex virus
c) Pseudomonas
d) S. aureus
e) Streptococcus pyogenes

106. A 7-year-old boy appears with fever, pruritis, painful erythema, and edema of the distal part of both upper and lower extremities. Mother denies history of allergy. Most likely diagnosis is:
a) Child abuse

b) Sunburn
c) S. aureus infection
d) Group A streptococcus infection
e) Papular-purpuric “gloves and stocks” syndrome

107. The most serious complication of loiasis (Loa Loa) infection is:
a) Osteomyelitis
b) Septic arthritis
c) Pneumonia
d) Filariasis
e) Encephalitis

108. The following statement is **not** true about loiasis (Loa Loa):
a) Loiasis causes **Calabar swellings** which are nonerythematous areas of subcutaneous edema 10–20 cm in diameter typically noted around joints (e.g., knee, wrist).
b) Patients appear with **transient** episodes of pruritis, erythema, localized edema in skin, subcutaneous tissue, and subconjunctiva.
c) The blood smears collected between 6 AM and 9 AM usually detect microfilariae.
d) Diethylcarbamazine is the drug of choice for eradication of microfilaremia but the medicine does not kill adult worms.
e) The dose of diethylcarbazine should be increased gradually in children to avoid treatment-associated complications, especially with high microfilarial levels.

109. The following statement is **not** true about propofol:
a) Propofol should be considered as a “sedation” agent.
b) Propofol causes less respiratory depression but it does produce hypotension.
c) Propofol should not be used for prolonged sedation (i.e., more than 12 hours) in children.
d) Propofol can be used solely for MRI, CT-scan, and radiotherapy procedures.
e) A combination of propofol and narcotics can be used for bone marrow aspiration and lumbar puncture.

110. A 10-year-old critically ill child is admitted in the PICU. He has been receiving propofol over the past 12 hours. All of the following complications can occur **except**:
a) Death
b) Metabolic acidosis
c) Profound shock
d) Cardiac failure
e) Intracranial hemorrhage

111. Prenatal ultrasonography in a fetus with Down syndrome may detect all of the following **except**:
a) A shortened femur
b) Absent nasal bones
c) A thickened nuchal fold
d) Cardiac anomalies
e) Elongated fingers

112. Gene therapy is effective in treating patients with the following disease:
a) Cystic fibrosis
b) Sickle cell disease
c) Leukemia
d) HIV infection
e) X-linked severe combined immunodeficiency (SCID)

113. All of the following is true about emergency contraception **except**:
a) Emergency contraceptive pills ($ECP_5$) should not be prescribed prior to need.
b) ECPs should be given as soon as possible and must be given within 72 hours of unprotected or inadequately protected sexual intercourse.
c) Antinausea medication (e.g., meclizine) should be taken 1 hour prior to intake combination oral contraceptive (COC) or PREVEN.
d) The patient should be counseled to use contraceptive pills until the next menstrual period.
e) Repeat the same dose of ECP 12 hours later.

114. A 17-year-old girl had unprotected sexual intercourse and received emergency contraceptive pills (ECPs). A 2 week follow up appointment has been made. All of the following should be done in the follow up visit **except**:
a) To find the effectiveness of the ECP therapy
b) To counsel the patient
c) To test for sexually transmitted diseases (STDs)
d) To diagnose early pregnancy
e) To avoid continuing contraception

115. The most specific diagnostic test for Wegener granulomatosis is:
a) Chest x-ray revealing pulmonary hemorrhage
b) Lung CT scan
c) Presence of anti-PR 3 antibodies to nuclear cytoplasmic antigens (ANCAs)
d) Renal biopsy reveals nonnecrotizing nongranulomatous angitis.
e) Sinus biopsy reveals nonnecrotizing nongranulomatous angitis.

116. Indications for intrapartum antimicrobial prophylaxis (IAP) are to prevent early-onset group B streptococcus (GBS) infection using a universal prenatal culture screening strategy at 35–37 weeks gestation for all women. The routine rectovaginal cultures are not indicated in women with GBS bacteriuria during the current pregnancy or women with a previous infant with invasive GBS disease because these women must receive IAP. IAP is indicated in all of the following women **except**:
a) Previous pregnancy with a positive GBS screening culture but the culture is negative in the current pregnancy and there is no history of invasive GBS disease with the previous infant.
b) Positive GBS screening culture during current pregnancy unless a planned cesarean section is performed without labor or rupture membrane.
c) Unknown GBS status associated with any one of the following: intrapartum fever (100.4°F or more), rupture membrane (18 hours or more), or premature delivery (less than 37 weeks gestation).
d) GSB bacteriuria during current pregnancy
e) Previous infant with invasive GBS disease

117. An asymptomatic infant is at 38 weeks gestation or more at delivery and whose mother received IAP (intrapartum antimicrobial prophylaxis) 4 hours or more before delivery. The next step in the management of the infant should be:
a) To discharge the infant home after 24 hours if other discharge criteria have been met and a person should be able to observe the baby at home properly.
b) To discharge the infant home after 48 hours if other discharge criteria have been met and a person should be able to observe the baby at home properly.
c) If laboratory results and clinical course are benign, infants should be discharge as early as 24 hours.
d) Full sepsis work up is indicated.
e) Partial sepsis work up is indicated.

118. The recommended duration of therapy for infant with GBS bacteremia without a focus is:
a) 7 days
b) 10 days
c) 14 days
d) 21 days
e) 28 days

119. The recommended duration of therapy for infants with GBS meningitis is:
a) 1 – 2 weeks
b) 2 – 3 weeks
c) 3 – 4 weeks
d) 4 – 5 weeks
e) 5 – 6 weeks

120. The recommended duration of therapy for infants with GBS ventriculitis or osteomyelitis is:
a) 1 week
b) 2 weeks
c) 3 weeks
d) 4 weeks
e) 6 weeks

121. The most common type in late onset GBS disease is:
    a) Ia
    b) Ib
    c) II
    d) III
    e) V

122. The most common type in GBS meningitis is:
    a) Ia
    b) Ib
    c) II
    d) III
    e) V

123. Children between 2 – 5 years of age watch TV on an average of:
    a) 0 – 10 hours/week
    b) 10 – 20 hours/week
    c) 20 – 30 hours/week
    d) 30 – 40 hours/week
    e) 40 – 50 hours/week

124. The most obvious source of exposure to violence for children in the USA is:
    a) Television
    b) Newspaper
    c) Music
    d) Toys
    e) Books

125. At what age should a child's diet not differ from that of the rest of the family:
    a) After 6 months
    b) After 12 months
    c) After 24 months
    d) After 36 months
    e) After 48 months

126. What percentage of all households in the USA are food insecure?
    a) 1%
    b) 2%
    c) 5%
    d) 10%
    e) 15%

127. The preferred agent/s for routine hand hygiene is/are:
    a) Gloves
    b) Soap and water
    c) Only cold water
    d) Only hot water
    e) Waterless hand hygiene products

128. The following statement is **not** true about waterless hand hygiene products:
    a) Remove dirt
    b) Increase compliance
    c) Save time
    d) Kill microbes
    e) Used before and after every patient examination.

129. The nosocomial infection rate is highest in the following facility:
    a) Emergency rooms
    b) Hospital clinics

c) Doctors offices
d) Long-term care facilities
e) Intensive care units (ICU)

130. The medication that reduces the secondary attack rate of mycoplasma institutional outbreak is:
a) Penicillin
b) Ceftriaxone
c) Cefotaxime
d) Tetracycline
e) Azithromycin

131. The most frequently used agent in the management of severe Mycoplasma pneumoniae complications especially neurologic complications is:
a) Fresh frozen plasma
b) Interleukin
c) Corticosteroids
d) CNS radiation
e) Intravenous immunoglobulin

132. In clinical manifestations, the hallmark of the Henoch-Schonlein purpura is:
a) Intussuception
b) Arthritis
c) Rash
d) Glomerulonephritis
e) Edema of lower extremities

133. A 5–year–old boy is diagnosed with Henoch-Schonlein purpura. He passed current jelly stools. The next step in management is:
a) Air/barium enema
b) Stool Guiac test
c) Stool culture
d) Abdominal x-ray
e) Observation only

134. A patient with Henoch-Schonlein purpura and IgA nephropathy may have elevated plasma antibody titers against the following organism:
a) H. parainfluenzae
b) H. influenzae
c) Group A streptococcus
d) Herpes simplex virus
e) S. aureus

135. The following statement is **not** true about the treatment of patients with Henoch-Schonlein purpura:
a) The symptomatic therapies (e.g., adequate hydration, acetaminophen, bland diet) are indicated for patients with arthritis, fever, malaise, and edema.
b) The competitive activities are not allowed in patients with H–S purpura.
c) The hot compress plus elevation of the scrotum improve scrotal edema
d) Oral or intravenous corticosteroids therapy may offer significant improvement in gastrointestinal and CNS complications.
e) A 'baby' aspirin (81 mg) therapy is indicated in patients with thrombotic episodes and presence of anticardiolipin or antiphospholipid antibodies.

136. The preferred therapy for patients with pseudomonas meningitis is:
a) Ceftazidime and gentamicin
b) Cefotaxime
c) Ceftriaxone
d) Azlocillin and gentamicin
e) Mezlocillin and gentamicin

137. The preferred therapy for patients with cystic fibrosis and pseudomonas infection is:
a) Cefotaxime

b) Ceftazidime
c) Gentamicin
d) Carbenicillin
e) Ticarcillin

138. A 10-year-old girl is being treated with intravenous ceftazidime and gentamicin for pseudomonas meningitis. The repeated CSF culture reveals Pseudomonas aeruginosa despite therapy. The following therapy may be indicated for this patient is:
a) Discontinue ceftazidime and add ceftriaxone
b) Discontinue gentamicin and add cefotaxime
c) Add carbenicillin
d) Concomitantly intraventricular or intrathecal gentamicin (1 – 2 mg once daily, independent of body weight) may be given until the CSF becomes sterile
e) Concomitantly intraventricular or intrathecal gentamicin (1 – 2 mg/kg once daily) may be given until the CSF becomes sterile.

139. The best method to prevent follicular dermatitis caused by pseudomonas contamination of hot tubs or whirlpools is:
a) To clean the hot tubs or whirlpools daily.
b) To maintain pool water at a pH 7.2 – 7.8 and free chlorine concentration at 70.5 mg/L.
c) To maintain pool water at a pH 6.5 – 7.1 and free chlorine concentration at 60.5 mg/L.
d) To maintain pool water at a pH 7.9 – 8.5 and free chlorine concentration at 70.5 mg/L.
e) To maintain pool water at a pH 7.9 – 8.5 and free chlorine concentration at 80.5 mg/L.

140. The most common organism causing otitis media, bacteremia, and bacterial pneumonia in children is:
a) H. influenzae
b) P. aeruginosa
c) S. aurius
d) S. epidermidis
e) S. pneumoniae

141. All of the following serotypes of S. pneumoniae resistant to penicillin **except**:
a) 4
b) 6
c) 9
d) 14
e) 19

142. The preferred initial therapy for serious infections caused by penicillin-resistant S. pneumoniae is:
a) Ceftriaxone
b) Augmentin
c) Clindamycin
d) Cefotaxime
e) Vancomycin

143. The following statement is **not** true about the currently available heptavalent pneumococcal vaccine containing conjugated capsular polysaccharide:
a) Vaccine decreases invasive infections by more than 93% of cases.
b) Vaccine decreases lobar pneumonias by more than 73% of cases.
c) Vaccine decreases otitis media by 6-7% of cases.
d) Vaccine does not decrease the complications of otitis media.
e) Vaccine can cause local swelling, redness, and fever when used along with other vaccines.

144. The following statement is **not** true about penicillin prophylaxis against pneumococcal diseases:
a) Penicillin prophylaxis is recommended for patients with asplenia or sickle cell disease.
b) Oral penicillin V potassium or once monthly intramuscular benzathine penicillin G provides adequate prophylaxis.
c) Prophylaxis is recommended for at least 1 year after splenectomy or up to 4 years of age.
d) High risk children with fever should be treated immediately regardless of vaccination history or penicillin prophylaxis.
e) The efficacy of erythromycin is unknown but it can be used in patients with penicillin allergy.

145. The patency of the omphalomesenteric (vitelline) duct may produce all of the following conditions **except**:
   a) Intestinal fistula
   b) Prolapse of the intestine
   c) Meckel diverticulum
   d) A polyp (cyst)
   e) Bladder outlet obstruction

146. All of the following clinical features are noted in neonatal cold injury **except**:
   a) Blueness of the face, hands, and feet
   b) Edema
   c) Apnea
   d) Bradycardia
   e) Pulmonary hemorrhage

147. All of the following clinical features are noted in hypermagnesemia **except**:
   a) Hypoventilation
   b) Hyporeflexia
   c) Hyperreflexia
   d) Lethargy
   e) Meconium plug syndrome is an associated finding

148. Initial therapy for patients with hypermagnesemia is:
   a) Exchange transfusion
   b) Intravenous calcium
   c) Diuretics
   d) Intravenous hydration
   e) Only supportive care and respiratory support

149. All of the following are the complications of patients with bone marrow transplantation (BMT) **except**:
   a) Infections
   b) Renal failure
   c) Respiratory failure
   d) Fluid and electrolyte problems
   e) Thrombocytosis

150. The donation of organs is contraindicated in all of the following conditions **except**:
   a) Traumatic organ injury
   b) Severe organ dysfunction
   c) Active infection (including HIV)
   d) Serious vascular disease
   e) CNS injury

151. A small child received transplanted adult kidney. He is putting out several hundred mL of urine per hour. The urine output is replaced with normal saline. The recorded blood pressure is at levels 20-30% higher than normal. The management may include all of the following **except**:
   a) Renal biopsy
   b) Monitor serum electrolytes closely
   c) Replace urine output and insensible water losses
   d) Watch for pulmonary edema
   e) Ultrasound and Doppler flow studies of the transplanted kidney to monitor renal blood flow and to diagnose obstructive problems.

152. The most common organism causing **persistent** tympanostomy tube otorrhea is:
   a) Pseudomonas aeruginosa
   b) Streptococcus pneumoniae
   c) Haemophilus influenzae
   d) Group A Streptococcus
   e) Staphylococcus aureus

153. A child appears with tube otorrhea. All of the following therapy may be required **except**:
    a) Ofloxacin otic solution
    b) Aural toileting
    c) A short course of oral prednisone
    d) Removal of the tube
    e) Outpatient management

154. A newborn is diagnosed with transient tachypnea of the newborn (TTNB). The chest x-ray findings include all of the following **except**:
    a) Fluid lines in the fissures
    b) Overaeration of both lungs
    c) Flat diaphragm
    d) Coarsely granular pattern
    e) Prominent pulmonary vascular markings

155. The adverse long-term outcome in polycythemia is most likely due to:
    a) Chronic intrauterine hypoxia and hyperviscosity
    b) Acute hypoxia
    c) Hyperoxia
    d) Hypercarbia
    e) Hypocarbia

156. Accelerated pubertal development in patients with shunted hydrocephalus or meningomyelocele is most likely due to:
    a) Increased gonadotropin secretion
    b) Decreased gonadotropin secretion
    c) Increased thyroxine secretion
    d) Decreased thyroxine secretion
    e) Increased ADH secretion

157. The following statement is not true about the treatment of hydrocephalus:
    a) Acetazolamide and furosemide reduce the rate of CSF production and provide temporary relief, but long-term outcome is poor.
    b) Shunt infection rate is about 10-15%.
    c) The outcome of intrauterine surgical treatment is poor because of high rate of associated cerebral anomalies.
    d) Most patients are treated with ventriculoperitoneal shunt.
    e) S. epidermidis is the most common organism causing shunt infection.

158. All of the following statements are true in determining the adequate milk supply during nursing **except**:
    a) Weighing the infant before and after every nursing
    b) Infants sleep 2-4 hours between feedings.
    c) Infants gain weight adequately.
    d) Infants pampers are wet adequately.
    e) Infants who are ‘light sleepers’ have adequate milk intake but need maternal body contact for comfort.

159. The following statement is **not** true about the treatment of hyperkalemia:
    a) The first drug of choice is intravenous sodium bicarbonate.
    b) Intravenous calcium stabilizes the cell membrane of heart cells and prevents arrythmias immediately when infused within a few minutes.
    c) Intravenous bicarbonate moves potassium within the cells and is useful in hyperkalemia associated with metabolic acidosis.
    d) Insulin moves potassium within the cells and is used along with glucose infusion to avoid hypoglycemia.
    e) Nebulized albuterol moves potassium within the cells by stimulating beta 1-receptor.

160. The average composition of diarrhea is:
    a) Sodium 55 mEq/L, potassium 25 mEq/L, bicarbonate 15 mEq/L
    b) Sodium 60 mEq/L, potassium 10 mEq/L, bicarbonate 10 mEq/L
    c) Sodium 40 mEq/L, potassium 25 mEq/L, bicarbonate 15 mEq/L
    d) Sodium 55 mEq/L, potassium 15 mEq/L, bicarbonate 25 mEq/L
    e) Sodium 50 mEq/L, potassium 20 mEq/L, bicarbonate 30 mEq/L

161. The fluid composition to treat diarrhea (replace stool mL per mL every 1-6 hours) is:
   a) $D_{10}$ 1/4 NS + 15 mEq/L bicarbonate + 25 mEq/L Kcl
   b) $D_5$ 1/4 NS + 15 mEq/L bicarbonate + 25 mEq/L Kcl
   c) $D_5$ 1/2 NS + 20 mEq/L bicarbonate + 20 mEq/L Kcl
   d) $D_5$ 1/5 NS + 15 mEq/L bicarbonate + 20 mEq/L Kcl
   e) $D_5$ 1/4 NS + 10 mEq/L bicarbonate + 10 mEq/L Kcl

162. The average composition of gastric fluid is:
   a) Sodium 50 mEq/L, potassium 10 mEq/L, chloride 80 mEq/L
   b) Sodium 60 mEq/L, potassium 10 mEq/L, chloride 90 mEq/L
   c) Sodium 55 mEq/L, potassium 15 mEq/L, chloride 70 mEq/L
   d) Sodium 50 mEq/L, potassium 20 mEq/L, chloride 60 mEq/L
   e) Sodium 70 mEq/L, potassium 25 mEq/L, chloride 90 mEq/L

163. The fluid composition to treat gastric fluid loss (replace output mL/mL every 1-6 hours) is:
   a) $D_5$ 1/2 NS + 20 mEq/L Kcl
   b) $D_5$ 1/2 NS + 10 mEq/L Kcl
   c) $D_{10}$ 1/2 NS + 10 mEq/L Kcl
   d) $D_5$ 1/4 NS + 15 mEq/L Kcl
   e) $D_{10}$ 1/4 NS + 25 mEq/L Kcl

164. The mean airway pressure (MAP) is increased by all of the following parameters **except**:
   a) Increased positive inspiratory pressure (PIP)
   b) Increased positive end expiratory pressure (PEEP)
   c) Increased inspiratory flow
   d) Prolonged expiratory time
   e) Increased ventilatory rate without changing the inspiratory time

165. All of the following statements are true about PKU (phenylketonuria) **except**:
   a) A pregnant mother with hyperphenylalaninemia should be on phenylalanine-restricted diet during pregnancy.
   b) Infants with persistent plasma phenylalanine level above 6 mg/dL should be treated with phenylalanine-restricted diet as soon as the diagnosis is confirmed.
   c) Infants do not need dietary restriction if the plasma phenylalanine levels are between 2–6 mg/dL.
   d) All patients should be on phenylalanine-restricted diet for life.
   e) Phenylalanine is not synthesized in the body.

166. An infant is being treated with phenylalanine-restricted diet. He develops rash, lethargy, anemia, anorexia, diarrhea, and failure to thrive. The most likely diagnosis is:
   a) Secondary infection
   b) Viral gastroenteritis
   c) Phenylalanine deficiency
   d) Phenylalanine toxicity
   e) Iron deficiency anemia

167. The mode of inheritance of PKU (phenylketonuria) is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

168. The enzyme deficiency in PKU is:
   a) Phenylalanine hydrogenase
   b) Phenylalanine synthetase
   c) Phenylalanine hydroxysynthase
   d) Phenylalanine aminotransferase
   e) Phenylalanine hydroxylase

169. The most important organ affected in PKU is:
   a) CNS
   b) Peripheral nervous system
   c) Cardiovascular
   d) Liver
   e) Gastrointestinal tract

170. Pulmonary interstitial emphysema (PIE) can be prevented by:
   a) Avoiding high positive inspiratory pressure (PIP)
   b) Avoiding high oxygen use
   c) Increasing high PIP
   d) Increasing mean ventilatory pressure
   e) Avoiding low positive end-expiratory pressure (PEEP)

171. The treatment of pulmonary interstitial emphysema (PIE) includes all of the following **except**:
   a) Selective intubation and ventilation of the involved lung and bronchus
   b) High frequency ventilation
   c) Oxygen
   d) Bronchoscopy performed in patients with mucus plug
   e) General respiratory care

172. The predominant source of bleeding in pulmonary hemorrhage is:
   a) Tracheal
   b) Bronchial
   c) Interstitial
   d) Laryngeal
   e) Alveolar

173. The treatment of pulmonary hemorrhage includes all of the following **except**:
   a) Blood transfusion
   b) Increased PEEP
   c) Intratracheal administration of epinephrine
   d) Suctioning to clear the airway
   e) Increased PIP

174. The following statement is **not** true about RhoGAM:
   a) RhoGAM is administered either at 28-32 of gestational age or at birth (40 weeks) in Rh-negative mothers.
   b) RhoGAM (1 mL or 300 microgram of human anti-D globulin) can remove approximately 10 mL of antigenic fetal cells from the maternal circulation.
   c) RhoGAM reduces the risk of sensitization of Rh-negative mothers to less than 1%.
   d) The proportionately larger amounts of RhoGAM are required in cases of large fetal-to-maternal transfusions.
   e) RhoGAM is given intramuscularly in Rh-negative mothers carrying a Rh-positive fetus, having an abortion, ectopic pregnancy, amniocentesis, chorionic villus biopsy, or uterine injury that may cause placental separation and fetal-to-maternal transfusions.

175. All of the following are clinical manifestations in patients with T-cell deficiency **except**:
   a) Otitis media
   b) Rhinitis
   c) Mucocutaneous candidiasis
   d) Pneumonia
   e) Chronic constipation

176. The following statement is **not** true about patients with B-cell defects:
   a) The clinical manifestations appear within first 2 months of age.
   b) The clinical manifestations may include recurrent otitis media, pneumonia, meningitis, bacteremia, and bronchitis.
   c) S. pneumoniae and H. influenzae type b infections are more common in patients with $IgG_2$ deficiency, X-linked agammaglobulinemia, or common variable immunodeficiency.
   d) Allergies and autoimmune disorders are common in selective IgA deficiencies.
   e) The patients with hyper-IgM syndrome may present with recurrent neutropenia, hemolytic anemia, or aplastic anemia.

177. A 14-month-old boy required a left myringotomy tube placement due to recurrent ear infections. The following investigation can lead to this diagnosis:
   a) ESR
   b) X-ray sinuses
   c) Head CT-scan
   d) Throat culture
   e) Serum immunoglobulin levels

178. Intravenous immunoglobulin (IVIG) is the preferred therapy for patients with primary antibody deficiencies. IVIG can cause anaphylactic reaction in the following condition:
   a) IgG deficiency
   b) IgM deficiency
   c) IgA deficiency
   d) IgE deficiency
   e) IgD deficiency

179. The most common organism producing peritonitis in patients with continuous ambulatory peritoneal dialysis (CAPD) is:
   a) S. aureus
   b) S. epidermidis
   c) Staphylococcus hemolyticus
   d) Group A Streptococcus
   e) Streptococcus pneumoniae

180. This organism produces exopolysaccharide protective biofilm or slime layer:
   a) S. aureus
   b) S. epidermidis
   c) E. coli
   d) Pseudomonas
   e) S. pneumoniae

181. S. epidermidis is the most common organism in all of the following infections **except**:
   a) Recurrent otitis media
   b) CSF shunt meningitis
   c) Premature infants with a central catheter
   d) Full term infants with an umbilical arterial line
   e) A child with malignancy and central venous catheter (e.g., Hickman or Broviac)

182. The following is **not** true about the real diagnosis of coagulase-negative staphylococci (e.g., S. epidermidis) infection:
   a) A full term infant is admitted for rule out sepsis due to maternal GBS infection. The infant's blood culture reveals S. epidermidis. The infant is receiving ampicillin and gentamicin.
   b) A preterm infant is admitted with respiratory distress syndrome. Umbilical arterial and venous lines are placed. After 7 days, the infant became symptomatic. The blood culture became positive for S. epidermidis.
   c) True bacteremia is suspected when blood cultures grow within 24 hours.
   d) True bacteremia is suspected when two blood cultures are positive for S. epidermidis.
   e) Two separate blood cultures are useful in differentiating true culture from contaminated culture before the initiation of antibiotic therapy.

183. The resistance to semisynthetic penicillins of S. aureus is related to:
   a) Penicillin-binding protein (PB2A)
   b) Penicillin-nonbinding protein
   c) Antibodies against S. aureus
   d) Penicillin-binding protein (PB2B)
   e) Penicillin-binding protein (PB2C)

184. The following statement is not true about methicillin-resistant staphylococcus aureus (MRSA) infections:
   a) The strict isolation of affected patients is the most effective way of preventing nosocomial infections in the hospital.
   b) Vancomycin is the drug of choice in MRSA infections.
   c) The patient who stayed next to the patient affected with MRSA infection should receive prophylactic antibiotics.

d) The strict isolation of newly colonized patients are indicated.
e) MRSA organisms are equally virulent like methicillin-sensitive S. aureus organisms.

185. The urine odor of a newborn smells like **boiled cabbage**. The most likely diagnosis is:
a) Glutaric acidemia
b) Isovaleric acidemia
c) Phenylketonuria
d) Maple syrup urine disease
e) Tyrosinemia

186. The urine odor of a newborn smells like **tomcat urine**. The most likely diagnosis is:
a) Tyrosinemia
b) Trimethylaminuria
c) Isovaleric acidemia
d) Hawkinsinuria
e) Multiple carboxylase deficiency

187. The urine odor of a newborn smells like **sweaty feet**. The most likely diagnosis is:
a) Glutaric acidemia (type II)
b) Oasthouse urine disease
c) Phenylketonuria
d) Maple syrup urine disease
e) Hawkinsinuria

188. All of the following conditions can **cause** white matter disorders (WMD) in preterm infants **except**:
a) Maternal toxemia
b) Fetal vasculitis
c) Fetal growth restriction
d) Hypothyroxinemia
e) Hypocarbia and hypercarbia

189. All of the following conditions can **protect** from white matter disorders (WMD) in preterm infants **except**:
a) Maternal toxemia
b) Magnesium sulfate
c) Prostaglandin inhibitors
d) Antenatal corticosteroids
e) Hypercarbia

190. The rate of bilirubin production in newborns is:
a) 2-4 mg/kg/day
b) 4-6 mg/kg/day
c) 6-8 mg/kg/day
d) 8-10 mg/kg/day
e) 10-12 mg/kg/day

191. All of the following conditions cause **indirect** hyperbilirubinemia **except**:
a) Sepsis
b) Down syndrome
c) Hypothyroidism
d) Gilbert syndrome
e) Crigler-Najjar syndrome

192. All of the following conditions cause **direct** hyperbilirubinemia **except**:
a) TORCH infection
b) Biliary atresia
c) Cystic fibrosis
d) Galactosemia
e) Spherocytosis

193. A 4-day-old newborn appears with jaundice and poor feeding. The serum total and direct bilirubin levels are 18 and 8 mg/dL respectively. The most likely diagnosis is:
a) Urinary tract infection
b) Spherocytosis
c) G6PD deficiency
d) Neonatal asphyxia
e) Breast feeding

194. All of the following conditions can cause indirect hyperbilirubinemia and positive Coombs test **except**:
a) Mother is 'O' and baby is 'A'
b) Mother is 'O' and baby is 'B'
c) Mother is 'Rh-negative' and baby is 'Rh-positive'
d) Minor group incompatibilities
e) G6PD deficiency

195. All of the following conditions can cause indirect hyperbilirubinemia and polycythemia **except**:
a) Giant cell hepatitis
b) Small for gestational age
c) Delayed cord clamping
d) Twin transfusion
e) Maternal-fetal transfusion

196. The following statement is not true about the guidelines for evaluation of sexual abuse in children:
a) Genital, rectal, and pharyngeal cultures should be obtained in all patients prior to antibiotic therapy.
b) Nonculture gonococcal tests (e.g., Gram stain, DNA probes, enzyme immunoassays, or nucleic acid amplification tests) of oropharyngeal, rectal, or genital tract specimens are also diagnostic.
c) Children should be evaluated for sexual transmitted diseases (e.g., Chlamydia trachomatis, syphilis, hepatitis B, and HIV).
d) In prepubertal children, when culture is not available, a positive nucleic acid amplification test on vaginal swab can be useful if the result can be verified by another nucleic acid amplification test.
e) Appropriate cultures should be obtained from people who had contact with sexually abused child.

197. A 7-year-old girl is diagnosed with Lyme disease. The preferred therapy is:
a) Amoxicillin
b) Doxycycline
c) Cefuroxime
d) Erythromycin
e) Azithromycin

198. An 8-year-old girl is diagnosed with Lyme disease. The preferred therapy is:
a) Doxycycline
b) Amoxicillin
c) Erythromycin
d) Cefuroxime
e) Azithromycin

199. A 12-year-old boy developed dermatitis in sun-exposed areas. He is being treated for Lyme disease. The most likely cause of dermatitis is:
a) Amoxicillin
b) Cefuroxime
c) Tetracycline
d) Isolated sun-burn
e) Doxycycline

200. A 6-year-old boy is allergic to penicillin. He is diagnosed with Lyme disease. The preferred therapy is:
a) Amoxicillin
b) Doxycycline
c) Tetracycline
d) Erythromycin
e) Cefuroxime

201. Most infants should begin to take solid foods at:
   a) 4 months of age
   b) 5 months of age
   c) 6 months of age
   d) 8 months of age
   e) 9 months of age

202. Most infants develop interest in solid foods at about:
   a) 2 months of age
   b) 3 months of age
   c) 4 months of age
   d) 6 months of age
   e) 8 months of age

203. Most infants show preferences for sweet and salty foods at about:
   a) 1 month of age
   b) 2 months of age
   c) 3 months of age
   d) 4 months of age
   e) 7 months of age

204. A fetus can swallow amniotic fluid as early as:
   a) 10 weeks of gestation
   b) 12 weeks of gestation
   c) 16 weeks of gestation
   d) 20 weeks of gestation
   e) 24 weeks of gestation

205. American Academy of Pediatrics recommended that infants should sleep in the following position to reduce the risk of sudden infant death syndrome (SIDS):
   a) Supine position
   b) Prone position
   c) Head up position (30 degrees angle)
   d) Head down position
   e) Head up position (45 degrees angle)

206. The most common cause of nasal polyposis in children is:
   a) Chronic sinusitis
   b) Acute sinusitis
   c) Chronic rhinitis
   d) Deviated nasal septum
   e) Cystic fibrosis

207. A 10-yar-old boy is diagnosed with nasal polyposis. He has no respiratory and gastrointestinal symptoms. The most likely diagnosis is:
   a) Allergy to dust
   b) Allergy to pollen
   c) Chronic sinusitis
   d) Nasal foreign body
   e) Cystic fibrosis

208. A child is diagnosed with Samter triad. Samter triad includes all of the following:
   a) Asthma, aspirin sensitivity, and nasal polyposis
   b) Asthma, tylenol sensitivity, and nasal polyposis
   c) Constipation, bronchitis, and nasal polyposis
   d) Constipation, asthma, and nasal polyposis
   e) Pancreatitis, diarrhea, and nasal polyposis

209. A boy is diagnosed with severe scoliosis and breathing problems during sleep. The most likely long-term complication is:
   a) Asthma
   b) Bronchitis
   c) Bronchiectasis
   d) Herniated disc
   e) Pulmonary hypertension

210. The gold standard for assessment of scoliosis is:
   a) Physical examination and an upright posteroanterior radiograph and measurement of the angle of curvature (cobb technique)
   b) CT scan
   c) MRI
   d) Ultrasonography
   e) Anteroposterior and lateral x-ray of the spine

211. The most common organism causing lymphangitis is:
   a) Staphylococcus aureus
   b) Group B Streptococcus
   c) E. coli
   d) Streptococcus pneumoniae
   e) Plasmodium falciparum

212. The antenatal diagnosis of Finnish type of congenital nephrotic syndrome is confirmed by:
   a) Ultrasonography of kidneys
   b) Elevated amniotic fluid protein level
   c) Edematous fetus
   d) DNA analysis
   e) Elevated amniotic fluid alpha-fetoprotein level

213. An adolescent girl appears for a routine physical examination. Physical examination reveals breast asymmetry and Tanner stage 3. The next step in management is:
   a) Ultrasonography
   b) Mammography
   c) MRI
   d) Breast tissue biopsy
   e) Reassurance

214. Hemifacial microsomia is characterized by all of the following **except**:
   a) Microstomia
   b) Deformed external ears
   c) Unilateral hypoplasia of mandible
   d) Blind fistulas between the angles of the mouth and the ears.
   e) Partial paralysis of the facial nerve

215. Persistence of unconjugated serum bilirubin levels above 20 mg/dL after the first week of life without hemolysis should suggest:
   a) ‘AO’ set up and Coombs positive
   b) ‘BO’ set up and Coombs positive
   c) G6PD deficiency
   d) Polycythemia
   e) Crigler-Najjar syndrome (type I)

216. The mode of inheritance of Crigler-Najjar syndrome (type I) is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

217. The mode of inheritance of Crigler-Najjar syndrome (type II) is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

218. There is a persistence of serum unconjugated bilirubin levels in a range of 1.5-22 mg/dL into and after the third week of life without hemolysis. The reduction of bilirubin with phenobarbital therapy should suggest:
   a) Crigler-Najjar syndrome (type I)
   b) Crigler-Najjar syndrome (type II)
   c) Dubin-Johnson syndrome
   d) Rotor syndrome
   e) 'ABO' incompatibility and Coombs negative

219. All of the following therapeutic modalities are indicated in patients with Crigler-Najjar syndrome (type I) **except**:
   a) Phototherapy
   b) Exchange transfusion
   c) Phenobarbital
   d) Plasmapheresis
   e) Orthotopic hepatic transplantation

220. The serum bilirubin levels producing brain injury beyond the neonatal period are:
   a) above 20 mg/dL
   b) above 25 mg/dL
   c) above 28 mg/dL
   d) above 30 mg/dL
   e) above 35 mg/dL

221. Ebstein anomaly is associated with the following:
   a) Tricuspid stenosis
   b) Tricuspid regurgitation
   c) Mitral stenosis
   d) Pulmonic stenosis
   e) Aortic regurgitation

222. Mitral valve prolapse is commonly associated with all of the following conditions **except**:
   a) Marfan syndrome
   b) Scoliosis
   c) Pectus excavatum
   d) Straight back syndrome
   e) Noonan syndrome

223. A prenatal evaluation of a fetus reveals short femur length, edema, hydrops, and normal chromosomes. The most likely diagnosis is:
   a) Noonan syndrome
   b) Turner syndrome
   c) Klinefelter syndrome
   d) Down syndrome
   e) Hypoplastic left heart syndrome

224. All of the following features are present in Noonan syndrome **except**:
   a) Aortic stenosis
   b) Short stature
   c) Web neck
   d) Cubitus valgus
   e) Pectus carinatum

225. Acanthosis nigricans (i.e., dark pigmentation of skin creases/flexural areas) is present in majority of patients with:
   a) Type I diabetes mellitus
   b) Type II diabetes mellitus
   c) Addison disease
   d) Liver failure
   e) Pituitary tumor

226. The most vulnerable areas of the brain in status epilepticus include all of the following **except**:
   a) Thalamus
   b) Amygdala
   c) Cerebellum
   d) Hippocampus
   e) Anterior cortical area

227. Congenital muscular dystrophy is associated with cerebral dysgenesis of the following condition:
   a) Walker-Warburg syndrome
   b) Thyroid myopathies
   c) Myasthenia gravis
   d) Mitochondrial myopathies
   e) Spinal muscular atrophies

228. The following treatment is not useful in patients with Landouzy-Dejerine disease:
   a) Physiotherapy
   b) Orthopedic measures for footdrop
   c) Orthopedic measures for scoliosis
   d) Cosmetic surgery of the facial muscles
   e) Reconstructive surgery

229. A full term male newborn, appropriate for gestational age, was born by normal spontaneous vaginal delivery. His respiratory rate drops 10 breaths per minute during sleep but is 40 breaths per minute when awake. Arterial blood gas (ABG) during sleep reveals pH 7.0, Paco$_2$ 80, and Pao$_2$ 50. However, ABG is normal when awake. He passed a hyperoxia test (i.e., Pao$_2$ becomes 260 with 100% oxyhood). His urine toxicology results are negative. His blood culture results are negative. He is being treated with ampicillin and gentamicin. His chest x-ray results are normal. The most likely diagnosis is:
   a) Transient tachypnea of the newborn (TTNB)
   b) Congenital central hypoventilation syndrome
   c) Critical Pulmonic stenosis
   d) Phenylketonuria
   e) Group B Streptococcal meningitis

230. Congenital central hypoventilation syndrome can be treated with all of the following **except**:
   a) Ventilatory support
   b) Nutritional care
   c) Phrenic nerve pacing after 2 years of age
   d) Prevention of acidosis, cerebral hypoxia, and ischemia
   e) Pharmacologic respiratory stimulation

231. The major cause of respiratory failure in patients with congenital central hypoventilation syndrome is:
   a) CNS defects
   b) Peripheral nervous system defects
   c) Intercostal muscle weakness
   d) Deformed ribs
   e) Diaphragmatic muscle fatigue

232. The most common cause of recurrent pneumonia in children:
   a) Gastroesophageal reflux
   b) Tracheoesophageal fistula
   c) Bronchopleural fistula
   d) Laryngeal atresia
   e) Oropharyngeal incoordination

233. The gold standard for evaluation of the swallowing mechanism in patients with chronic aspiration is:
  a) Esophagoscopy
  b) Bronchoscopy
  c) Laryngoscopy
  d) Salivagram
  e) A modified barium swallow with videofluroscopy

234. The long-term effect of using-over-the counter antacids containing magnesium in children is:
  a) Diarrhea
  b) Constipation
  c) Vomiting
  d) Obstipation
  e) Abdominal distension

235. The long-term effect of using over-the-counter antacids containing aluminum in children is:
  a) Diarrhea
  b) Constipation
  c) Vomiting
  d) Obstipation
  e) Abdominal distension

236. The immediate postoperative complication after surgical repair of coarctation of aorta is:
  a) Rebound hypertension
  b) Hypotension
  c) Aortic aneurysm
  d) Upper extremities hypotension
  e) Anastomotic leak

237. The treatment for postoperative hypertension after surgical repair of coarctation of aorta is:
  a) Antihypertensive medication
  b) Reoperation because of operative failure
  c) Renal failure
  d) Cardiac failure
  e) Fluid retention because of increased ADH secretion

238. The development of recoarctation after surgical repair of coarctation of the aorta is best treated with:
  a) Repeat surgical repair
  b) Reassurance
  c) Aspirin
  d) Vasodilator medication
  e) Balloon angioplasty

239. A 5-month-old girl appeared with history of respiratory infections followed by congestive cardiac failure. She was completely asymptomatic prior to this episode. She appeared with dyspnea, cough, and failure to thrive. Physical examination revealed edema, hepatomegaly, and pulmonary congestion. Chest x-ray revealed cardiomegaly and clear lung fields. EKG reveals left atrial and left ventricular hypertrophy. Echocardiogram revealed a bright endocardial surface and a dilated, poorly contracting left ventricle. The most likely diagnosis is:
  a) Hypoplastic left ventricle
  b) Aortic stenosis
  c) Tetralogy of Fallot
  d) Cardiomyopathy
  e) Endocardial fibroelastosis

240. The preferred therapy for patients with end-stage endocardial fibroelastosis is:
  a) Digoxin
  b) Lasix
  c) Pacemaker
  d) Removal of endocardial tissue
  e) Heart transplantation

241. All of the following are indications of platelet transfusions in infants within 4 months of age **except**:
a) Platelet counts less than 20,000 and clinically stable
b) Platelet counts less than 50,000 and invasive procedure
c) Platelet counts less than 100,000 and bleeding
d) Platelet counts less than 100,000 and clinically unstable
e) Platelet counts less than 150,000 and normal platelet functions but bleeding

242. All of the following are indications of platelet transfusions in children and adolescents **except**:
a) Platelet counts less than 10,000, marrow failure without bleeding risk factors
b) Platelet counts less than 20,000, marrow failure with bleeding risk factors
c) Platelet counts less than 50,000 and bleeding
d) Platelet counts less than 50,000 and invasive procedures
e) Platelet counts more than 100,000 and normal platelet functions but bleeding

243. All of the following are indications of fresh frozen plasma (FFP) transfusions in neonates **except**:
a) Prophylactic FFP transfusion to prevent intraventricular hemorrhage (IVH) in premature infants
b) Bleeding in vitamin K deficiency
c) Disseminated intravascular coagulation (DIC) with bleeding
d) Bleeding in congenital coagulation factor deficiency when more specific therapy is either unavailable or inappropriate
e) FFP is mixed with packed RBCs to simulate whole blood for use in massive transfusion or cardiovascular surgery.

244. The following is **not** an indication for pediatric FFP transfusion:
a) Factor VII deficiency
b) Emergency reversal of warfarin effects which are actively bleeding or require emergency surgery
c) Protein C, protein S, and antithrombin III deficiencies
d) Plasma exchange replacement fluid for thrombotic thrombocytopenic purpura
e) Dilutional coagulopathy and bleeding

245. A meticulous surgeon performed a thyroidectomy operation. All four parathyroid glands were undisturbed. This complication may occur:
a) Tetany
b) Hyperparathyroidism
c) Hyperthyroidism
d) Hypopituitarism
e) Hypoadrenalism

246. The probable etiology of craniosynostosis:
a) Dysfunctional osteoblasts
b) Dysfunctional osteoclasts
c) Small size of ventricles
d) Excessive maternal intake of calcium
e) Abnormal development of the base of the skull

247. The following condition is **not** associated with craniosynostosis:
a) Crouzon syndrome
b) Apert syndrome
c) Pfeiffer syndrome
d) Carpenter syndrome
e) Aqueductal stenosis

248. Craniosynostosis may be associated with the following:
a) Mutations of fibroblast growth factor receptors (FGFR)
b) Mutations of epidermal growth factor receptors
c) Trisomy 18
d) Tuner syndrome
e) Klinefelter syndrome

249. A child develops lethargy, bradycardia, hypotension, and myosis within 1 hour of ingestion of a medication. He is recently diagnosed with a syndrome. The most likely cause of the clinical presentation is:

a) Attention deficit hyperactivity disorders (ADHD)
b) Tic syndrome
c) Clonidine toxicity
d) Atropine toxicity
e) Over-the-counter cough medicine ingestion

250. The following therapy is **not** true about clonidine toxicity:
a) Gastric decontamination should be performed as soon as possible.
b) Aggressive supportive care is indicated
c) Naloxone reverses CNS and respiratory depression.
d) Continuous infusion of naloxone may be necessary.
e) Extracorporeal removal of clonidine is not indicated.

251. A child is admitted for iron toxicity and is treated with intravenous deferoxamine. The most likely complication of deferoxamine therapy is:
a) Hypotension
b) Hypertension
c) Hyperpigmentation
d) Hypopigmentation
e) Diarrhea

252. The antidote for organophosphate and carbamate pesticide poisoning is:
a) Atropine
b) Diphenhydramine
c) Naloxone
d) Physostigmine
e) Benztropine

253. The antidote for methemoglobinemia is:
a) Naloxone
b) Atropine
c) Methylene blue
d) Benztropine
e) N-Acetylcysteine

254. The antidote for organophosphate insecticide poisoning is:
a) Dimercaprol
b) Fomepizole
c) Physostigmine
d) Pyridoxine
e) Pralidoxine

255. The antidote for acetaminophen toxicity is:
a) Atropine
b) Naloxone
c) Pyridoxine
d) Flumazenil
e) N-Acetylcysteine

256. The antidote for anticholinergic agents is:
a) Physostigmine
b) Atropine
c) Naloxone
d) N-Acetylcysteine
e) Diphenhydramine

257. The antidote for lead poisoning is:
a) Dimercaptosuccinic acid
b) Benztropine

c) Deferoxamine
d) Naloxone
e) Fomepizole

258. The antidote for INH toxicity is:
a) Pyridoxine
b) Diphenhydramine
c) Cyanocobalamine
d) Thiamine
e) Niacin

259. The antidote for benzodiazepines toxicity is:
a) Fomepizole
b) Flumazenil
c) Benztropine
d) Pralidoxime
e) Naloxone

260. The antibody for digoxin toxicity is:
a) Atropine
b) Physostigmine
c) Naloxone
d) Diphenhydramine
e) Digoxin-specific Fab antibodies

261. The antidote for narcotic toxicity is:
a) Atropine
b) Ethanol
c) Pyridoxine
d) Benztropine
e) Naloxone

262. The following statement is **not** true about the basic safety tips that children should learn to prevent animal bite injuries:
a) Children should not disturb any animal that is eating or sleeping.
b) Children should not go near an unfamiliar animal.
c) Children should not disturb a mother dog that is caring for or feeding her puppies.
d) Children should run away from an unaccompanied dog.
e) Children should remain still if an unfamiliar animal approaches.

263. The most common organism in rat-bite fever is:
a) Spirillum minus
b) Pasteurella multocida
c) Mixed anaerobes
d) Eikenella
e) Streptobacillus moniliformis

264. The most common organism responsible for sodoku is:
a) Spirillum minus
b) Streptobacillus moniliformis
c) P. multocida
d) Haemophilus influenzae
e) S. aureus

265. The most common organism in dog bite wound infection is:
a) Mixed anaerobes
b) H. influenzae
c) Spirillum minus
d) Eikenella corrodens
e) Alpha-hemolytic streptococci

266. The most common organism in cat bite wound infection is:
   a) Pasteurella multocida
   b) S. aureus
   c) S. intermedius
   d) Spirillum minus
   e) Streptobacillus moniliformis

267. The most common organism in clenched fist injury infection is:
   a) Anaerobic bacteria
   b) Eikenella
   c) S. aureus
   d) P. multocida
   e) S. intermedius

268. All of the following organisms are responsible for human bite wound infections **except**:
   a) Nontypable Haemophilus influenzae
   b) S. aureus
   c) Alpha-hemolytic streptococci
   d) Eikenella corrodens
   e) Streptobacillus moniliformis

269. An 8-year-old female child has recently immigrated from a Papua New Guinea. She is asymptomatic. Physical examination reveals goiter. Thyroid function tests on a patient with endemic goiter should reveal:
   a) Lower serum $T_4$, higher serum $T_3$, and moderately higher serum TSH
   b) Lower serum $T_4$, Lower serum $T_3$, and higher serum TSH
   c) Normal serum $T_4$, Normal serum $T_3$, and normal serum TSH
   d) Higher serum $T_4$, higher serum $T_3$, and lower serum TSH
   e) Normal serum $T_4$, higher serum $T_3$, and normal serum TSH

270. A 12-year-old girl has problems with her school work and her friends. She appears with a history of emotional disturbances (i.e., irritable, excitable, cries easily) and motor hyperactivities. She has a voracious appetite. She has been losing weight for the last 9 months. Physical examination reveals mildly enlarged thyroid gland and a fine tremor in hands. The most likely diagnosis is:
   a) Anorexia nervosa
   b) Pituitary tumor
   c) Graves disease
   d) Addison disease
   e) Emotional stress

271. A nursing mother is diagnosed with Graves disease. The preferred therapy is:
   a) Propylthiouracil
   b) Methimazole
   c) Radioiodine
   d) Total thyroidectomy
   e) Subtotal thyroidectomy

272. A 17-year-old girl is diagnosed with Graves disease. The preferred therapy is:
   a) Methimazole
   b) Propylthiouracil
   c) Radioiodine
   d) Subtotal thyroidectomy
   e) Total thyroidectomy

273. Congenital hyperthyroidism is due to the transfer of the following antibody through the placenta:
   a) Thyroid stimulating antibody
   b) Thyroid releasing antibody
   c) Thyrotropin receptor-stimulating antibody (TRSAb)
   d) Thyrotropin receptor-blocking antibody (TRBAb)
   e) Thyroid inhibiting antibody

274. A prenatal use of propranolol in maternal thyrotoxicosis may have the following adverse effect in a newborn:
  a) Respiratory depression
  b) Bradycardia
  c) Tachycardia
  d) Hypotension
  e) Hypertension

275. A full-term newborn is born by normal spontaneous vaginal delivery. He is asymptomatic. His mother was treated with propylthiouracil for hyperthyroidism. The boy was discharged on the second day of life. On the fourth day, he became irritable, restless, anxious, and alert. The maternal history of GBS colonization was missed. The most likely diagnosis:
  a) GBS meningitis
  b) Sepsis
  c) Hyperthyroidism
  d) Hypothyroidism
  e) GBS bacteremia

276. The preferred therapy for congenital hyperthyroidism:
  a) Methimazole
  b) Lugol solution
  c) Thyroxine
  d) Partial thyroidectomy
  e) Propranolol and propylthiouracil (PTU)

277. All of the following treatments may be required in a newborn with severe thyrotoxicosis **except**:
  a) Propranolol
  b) Propylthiouracil
  c) Lugol solution
  d) Corticosteroids
  e) Thyroidectomy

278. The anticonvulsants that bind to **beta-subunit of GABA$_A$** receptor to increase the action of endogenous agonist GABA and prolong opening time of chloride ion channels are:
  a) Benzodiazepines
  b) Barbiturates
  c) Vigabatrin
  d) Tiagabin
  e) ACTH

279. The anticonvulsants that bind to **alpha-subunit of GAGA$_A$** to increase the frequency of opening of chloride ion channels are:
  a) Benzodiazepines
  b) Vigabatrin
  c) Tiagabin
  d) Barbiturates
  e) Valproic acid

280. The anticonvulsant that **irreversibly binds to GABA-transaminase** to inhibit degradation of inhibitory neurotransmitter GABA resulting in an increase of GABA levels is:
  a) Vigabatrin
  b) Carbamazepin
  c) Ethosuximide
  d) Tiagabine
  e) Zonisamide

281. The anticonvulsant that **blocks uptake of synaptically released GABA** into both presynaptic neurons and glial cells, and allows GABA to remain at the site of action for longer periods is:
  a) Tiagabine
  b) Topiramate
  c) Phenytoin

d) Leviractam
e) Oxcarbazepine

282. The anticonvulsant that acts by decreasing the sustained repetitive firing of neurons by blocking sodium-dependent channels and by reducing depolarization-dependent calcium uptake is:
a) Carbamazepine
b) Ethosuximide
c) Gabapentin
d) Lamotrigine
e) Phenobarbital

283. The mechanism of action of carbamazepine is **similar** to the following anticonvulsant:
a) Benzodiazepines
b) Ethosuximide
c) Tiagabine
d) ACTH
e) Phenytoin

284. The anticonvulsant that **blocks calcium channels** associated with thalamocortical pathway is:
a) Topiramate
b) Ethosuximide
c) Gabapentin
d) Phenytoin
e) Tiagabine

285. The anticonvulsant that **blocks voltage-dependent sodium channels and increases calcium-dependent potassium conductance** is:
a) Valproic acid
b) Phenobarbital
c) Nitrazepam
d) Phenytoin
e) Tiagabine

286. The anticonvulsant that **blocks voltage-dependent sodium channels** is:
a) Topiramate
b) Phenytoin
c) Clobazam
d) Phenobarbital
e) ACTH

287. The anticonvulsant that acts as **voltage-sensitive sodium channels** to stabilize neuronal membranes and **inhibits neuronal release of glutamate** (excitatory neurotransmitter) is:
a) Lamotrigine
b) Phenytoin
c) Gabapentin
d) Phenobarbital
e) Ethosuximide

288. The mechanism of action of gabapentin (anticonvulsant) is:
a) To bind with the neuronal membranes (glutamate synapses) and increase GABA (inhibitory neurotransmitter) turnover.
b) To block reuptake of the GABA into neuronal and glial cells.
c) To bind with the GABA transaminase receptors and increase GABA levels.
d) To bind with the alpha-subunit of $GABA_A$ receptors to potentiate the action of GABA and increase frequency of opening of chloride ion channels.
e) To bind with the beta-subunit of $GABA_A$ receptors to potentiate the action of GABA and prolong opening time of chloride ion channels.

289. A healthy 6-month-old child is brought to the emergency room with history of sudden onset of seizures. The seizures are characterized by sudden flexions of neck and trunk, and extensions of both upper and lower extremities. He was born by normal

spontaneous vaginal delivery with good Apgar scores. On second day of life, he was discharged. He received all required immunizations at 2 months, 4 months, and 6 months of age. The last immunization was given by a private doctor 2 days prior to this episode. This is the first episode of seizure activities. The mother noticed seizure activities when he was sleeping. Mother denies history of trauma. Physical examination reveals normal vital signs and neurological findings. Head CT scan is normal. EEG reveals hypsarrythmia. The most likely diagnosis is:
a) Meningitis
b) Child abuse
c) Infantile spasms
d) Normal newborn movements
e) Immunization induced seizures

290. The following is **not** true about the treatment of infantile spasms:
a) ACTH is the preferred therapy.
b) Prednisone is less effective than ACTH.
c) ACTH and prednisone can control seizures up to 70% of cases.
d) About 33% of patients suffer relapse when ACTH or prednisone is discontinued.
e) There is no relation between the degree of seizure control and the neurologic and cognitive outcome.

291. All of the following are the side effects of ACTH **except**:
a) Hypoglycemia
b) Hypertension
c) Infection
d) Gastrointestinal disturbances
e) Transient brain shrinkage

292. All of the following are the side effects of carbamazepine **except**:
a) Hypernatremia
b) Leukopenia
c) Elevated AST
d) Elevated ALT
e) Idiosyncratic reaction

293. The active metabolite of carbamazepine:
a) Carbamazepine –8, 9– epoxide
b) Carbamazepine –10, 11– epoxide
c) Carbazine –10, 11– epoxide
d) Carbapine –8, 9– epoxide
e) Carbamazepine –12, 13– epoxide

294. The rare side effects of valproic acid includes all of the following **except**:
a) Reye-like syndrome
b) Irreversible hepatotoxicity
c) Lethargy
d) Coma
e) Increased serum carnitine levels

295. A child developed lethargy, weakness, and hypotonia. He is being treated with valproic acid for seizure activities. The most likely cause of these clinical manifestations is:
a) Recurrence of seizures
b) Valproic acid toxicity
c) New onset of seizures
d) Carnitine deficiency
e) Valproic acid subtherapeutic level

296. The use of the following anticonvulsant is contraindicated in patients who are receiving ketogenic diet:
a) Valproic acid
b) Phenobarbital
c) Phenytoin

d) ACTH
e) Vigabatrin

297. A 3-year-old boy has been walking on his toes for the last 2 years. His mother is worried. He is developmentally normal for his age. The next step in the management is:
a) Orthopedic consultation
b) Bilateral x-ray of both ankles
c) Ankle splint
d) Surgical release of Achilles tendon
e) Reassurance

298. A 4-year-old girl with history of unilateral toe walking. The most likely diagnosis is:
a) Cerebral diplegia
b) Habitual
c) Tethered spinal cord
d) Duchenne muscular dystrophy
e) Hip dislocation

299. A newborn is diagnosed with congenital muscular torticollis. A careful examination of the following is indicated:
a) Heart
b) Kidney
c) CNS
d) Hip
e) Spleen

300. The most important physical examination finding in a newborn with development dysplasia of the hip (DDH) is:
a) The Barlow test
b) The Ortolani test
c) Asymmetric thigh skin folds
d) Asymmetric leg lengths
e) Hips are flexed and abducted

301. A newborn's routine physical examination reveals audible hip clicks. Hip clicks are due to all of the following conditions **except**:
a) Snapping of gluteal tendons
b) Breaking the surface tension across the hip joints
c) Rotating knee (femorotibial) joints
d) Moving patellofemoral joints
e) Dislocating hip joints

302. The best diagnostic study in **newborns** with developmental dysplasia of the hip (DDH) is:
a) MRI
b) CT-scan
c) Arthrography
d) Lateral x-ray of the hip joint
e) Dynamic ultrasonography

303. The best diagnostic study in **older infants and children** with developmental dysplasia of the hip is:
a) MRI
b) CT-scan
c) Arthrography
d) Ultrasonography
e) Anteroposterior and Lauenstein (frog) lateral x-ray of the pelvis

304. The preferred therapy **in newborns** with DDH is:
a) Open surgical reduction
b) Closed surgical reduction
c) Hip cast
d) Reassurance
e) Flexion and abduction of the hip for 1-2 months

305. The preferred therapy in patients with DDH **between 1-6 months of age** is:
   a) Pavlik harness
   b) Hip cast
   c) Reassurance
   d) Open surgical reduction
   e) Closed surgical reduction

306. The preferred therapy in patients with DDH **between 6-18 months of age** is:
   a) Closed surgical reduction
   b) Open surgical reduction
   c) Pavlik harness
   d) Frejka splint
   e) Hip cast

307. The preferred therapy in patients with DDH **between 18 months-8 years of age** is:
   a) Open surgical reduction
   b) Closed surgical reduction
   c) Hip cast
   d) Frejka splint
   e) Pavlik harness

308. The most severe complication of the DDH is:
   a) Acetabular dysplasia
   b) Recurrence of dislocation
   c) Postsurgical infection
   d) Residual subluxation
   e) Avascular necrosis of capital femoral epiphysis

309. A mother is receiving a drug during lactation. The best way to detect the amount of drug a breast-feeding infant receives is:
   a) Total amount of maternal drug intake
   b) Maternal serum drug level
   c) Infant serum drug level
   d) Infant saliva drug level
   e) Analyze the amount of drug in the breast milk

310. The amount of drug that is absorbed in the infants gastrointestinal tract from the mother's breast milk can be obtained by:
   a) Examining infant's saliva
   b) Performing urine toxicology test
   c) Examining infant's stool
   d) Examining infant's gastric pH
   e) A clinical pharmacy or pharmacology service

311. A predisposing condition that can cause labial adhesion is:
   a) Vaginal septum
   b) Rectovaginal fistula
   c) Urethral prolapse
   d) Imperforate anus
   e) Uterine prolapse

312. A newborn is diagnosed with the labial adhesion. She is treated with topical estrogen cream for one week. The following treatment is indicated after estrogen therapy to prevent the recurrence of labial adhesion:
   a) Petrolatum ointment
   b) Soak with saline solution
   c) Soak with estrogen solution
   d) Progesterone cream
   e) A combination of estrogen and progesterone ointment

313. All of the following allele of protease inhibitors (Pi) have normal liver function tests (LFTs) **except**:
   a) PiZZ

b) PiMM
c) PiMS
d) PiMZ
e) PiSZ

314. The diagnosis of alpha-1-antitrypsin deficiency is confirmed is:
a) PiZZ phenotype
b) Bone marrow biopsy
c) Liver scan
d) PiMM phenotype
e) Liver biopsy

315. The curative therapy for patients with alpha-1-antitrypsin deficiency is:
a) Ursodeoxycholic acid
b) Liver enzymes
c) Liver transplantation
d) Intramuscular alpha-1-antitrypsin
e) Intravenous alpha-1-antitrypsin

316. The preferred therapy for patients with recurrent respiratory papillomatosis is:
a) Intralaryngeal sclerosing agent
b) Intralaryngeal epinephrine
c) Intralaryngeal corticosteroids
d) Reassurance
e) Excision with $CO_2$ laser

317. A newborn developed noisy breathing and mild respiratory distress. He was diagnosed with recurrent respiratory papillomatosis. He acquired the disease from his mother:
a) At the time of delivery
b) In utero
c) Immediately after birth
d) During nursing
e) Within 7 days after birth

318. The recurrent respiratory papillomatosis (RRP) is caused by the following types of human papillomavirus (HPV):
a) Types 1 and 3
b) Types 2 and 4
c) Types 6 and 11
d) Types 12 and 14
e) Types 13 and 15

319. All of the following environmental irritants can cause cough, asthma, or chronic lung disease **except**:
a) Ozone
b) Nitrogen dioxide
c) Marijuana smoke
d) Tobacco smoke
e) Carbon dioxide

320. A mother is pregnant with her second child. Her first child suffered from a congenital heart disease. The incidence of heart disease in her second child is:
a) 0.8%
b) 1-2%
c) 2-6%
d) 10-20%
e) 20-30%

321. A mother is pregnant with her third child. Her first and second children suffered from congenital heart disease. The incidence of heart disease in her third child is:
a) 2-6%

b) 10-20%
c) 20-30%
d) 30-50%
e) 50-100%

322. The lateral thoracotomy was performed on a child with tetralogy of Fallot. All of the following complications can occur shortly after surgery **except**:
a) Chylothorax
b) Horner syndrome
c) Diaphragmatic paralysis
d) Cardiac failure
e) Hyperactive radial pulse

323. An infant is diagnosed with tetralogy of Fallot and admitted for the modified Blalock-Taussig shunt operation. Two days prior to surgery, in the early morning the infant developed cyanosis, tachypnea, and restlessness. The resident who was on call made the diagnosis hypoxic, 'blue', or 'tet' spells. The infant was placed on the abdomen in knee-chest position, received oxygen, and subcutaneous injection of morphine (0.2 mg/kg). The infant remained cyanotic and developed metabolic acidosis. The infant received a rapid intravenous infusion of sodium bicarbonate but did not improve. The next step in management is:
a) Sepsis work up
b) Repeat ABG
c) Repeat EKG
d) Repeat echocardiogram
e) Intravenous methoxamine

324. An infant is diagnosed with a **severe form of tetralogy of Fallot.** She is receiving prostaglandin $E_1$ infusion. The preferred therapy for the infant is:
a) Prostaglandin $E_2$ infusion
b) Continue $PGE_1$ infusion
c) Oral propranolol
d) Iron therapy
e) Open heat surgery and total correction

325. An infant is diagnosed with a **less severe form of tetralogy of Fallot.** He is growing normally and has no cyanotic spells. The time to perform surgical repair is:
a) Between 1 and 3 months
b) Between 4 and 12 months
c) Between 12 and 15 months
d) Between 15 and 18 months
e) Between 18 and 24 months

326. An infant is diagnosed with a less severe form of tetralogy of Fallot. She is waiting for a surgical repair but needs careful observation. All of the following treatments are useful **except**:
a) Hydration
b) Iron
c) Propranolol
d) Oxygen prn
e) Sodium bicarbonate

327. The survival of premature RBCs is:
a) 0-20 days
b) 20-40 days
c) 40-60 days
d) 60-80 days
e) 80-100 days

328. All of the following conditions cause impaired vitamin $B_{12}$ absorption **except**:
a) Transcobalamin II deficiency
b) Surgical removal of terminal ileum
c) Duplications of small intestine

d) Diphyllobothrium latum infection
e) Imerslund-Grasbeck syndrome

329. The preferred therapy for vitamin $B_{12}$ deficiency secondary to Imerslund-Grasbeck syndrome is:
a) Oral vitamin $B_{12}$ plus iron
b) Oral vitamin $B_{12}$
c) Oral folic acid and vitamin $B_{12}$
d) Parenteral treatment with folic acid
e) Parenteral treatment with vitamin $B_{12}$

330. All of the following are complications of sickle cell trait **except**:
a) Intraocular bleeding
b) Hematuria
c) Splenic infarcts at high altitude
d) Hypersplenism
e) Sudden death during severe exercise

331. A pregnant mother was treated with trimethoprim-sulfamethoxazole for an urinary tract infection (UTI) 2 weeks prior to delivery. A full-term infant is delivered by normal spontaneous vaginal delivery with good Apgar scores. However, the infant appears pale and jaundice. The complete blood count reveals hemoglobin 8 g/dL, hematocrit 24%, reticulocyte 10%, WBC 15,000 cells/mm$^3$, polymorphonuclear leukocytes 55%, lymphocytes 43%, monocytes 2%, and platelets 250,000. Unstained or supravital preparations of RBCs reveal Heinz bodies. The serum total and direct bilirubin levels are 8 and 0.5 respectively at 4 hours of age. The mother's blood type is A+, and baby's type is O+ and Coombs negative. The infant is placed under photography. The most likely diagnosis is:
a) Urinary tract infection with jaundice
b) Rh-incompatibility with hemolytic jaundice
c) ABO-incompatibility with hemolytic jaundice
d) G6PD deficiency with hemolytic jaundice
e) Minor blood group incompatibility with jaundice

332. A child was recently diagnosed with acute rheumatic fever. She is receiving aspirin (60 mg/kg/day). She developed a severe hemolytic episode after aspirin therapy. The most likely diagnosis is:
a) Aspirin allergy
b) Aspirin anaphylaxis
c) G6PD deficiency and hemolysis
d) Rh-incompatibility and hemolysis
e) Rheumatic fever causing hemolysis

333. A preterm infant developed spontaneous hemolytic jaundice. The infant is O+ and Coombs negative. The mother is B+. The diagnosis of G6PD deficiency is made. The most likely variety of G6PD that can cause spontaneous hemolysis in preterm infants but **not** term infants is:
a) G6PD A+
b) G6PD A–
c) G6PD B+
d) G6PD B–
e) G6PD C+

334. A mother brought her three young children for a routine physical examination. Their father recently died of stroke at the age of 35. They have a paternal uncle who has high blood pressure. He is 30 years old. They moved recently to a new city. All children are healthy. The physical examination may reveal:
a) Abnormal hearing test results
b) Abnormal visual screening test results
c) Abnormal echocardiograms
d) Abnormal EKG findings
e) Abnormal blood pressure measurements

335. A child appears with a history of headache, dizziness, and visual disturbances. The physical examination reveals hypertension. Laboratory findings reveal elevated plasma and urine levels of aldosterone, 18-oxocortisol, and 18-hydroxycortisol, and decreased plasma renin activities. The preferred therapy is:

- a) Spironolactone
- b) Hydrochlorthiazide
- c) Propranolol
- d) Testosterone
- e) Prednisone

336. The most common complication of bacterial meningitis is sensorineural hearing loss. The hearing loss is most commonly due to:
- a) Labyrinthitis
- b) Vestibulitis
- c) Cerebritis
- d) Otitis media with effusion
- e) Edema of the auditory nerve

337. The most common bacterial meningitis causing sensorineural hearing loss in children is:
- a) Pneumococcus
- b) Meningococcus
- c) Gonocococcus
- d) Group B streptococcus
- e) H. influenzae type b

338. A child developed seizure activities during the therapy for bacterial meningitis. Immediately, the child received intravenous lorazepam and seizure activities stopped. The preferred maintenance therapy for seizure activities is:
- a) Phenobarbital
- b) Phenytoin
- c) Valproic acid
- d) Carbamazepin
- e) Diazepam

339. The following is **not** the clinical manifestation of pseudotumor cerebri:
- a) Headache
- b) Diplopia
- c) Papilledema
- d) Focal neurologic signs
- e) Vomiting

340. The presence of diplopia in patients with pseudotumor cerebri is due to:
- a) Paralysis of optic nerve
- b) Paralysis of abducens nerve
- c) Paralysis of facial nerve
- d) Paralysis of vagus nerve
- e) Paralysis of glossopharyngeal nerve

341. A 3-year-old girl appears with headache and vomiting. Ophthalmologic examination reveals bilateral papilledema with enlarged blind spots. These clinical findings are consistent with the diagnosis of:
- a) Brain atrophy
- b) Pseudotumor cerebri
- c) Optic nerve glioma
- d) Retinoblastoma
- e) Metastatic neuroblastoma

342. The following statement is **not** true about the patients with pseudotumor cerebri:
- a) The goal is to detect and treat the underlying cause.
- b) Pseudotumor cerebri is not a self-limited condition.
- c) Many patients require repeated follow-up and only monitoring of the visual acuties.
- d) Some patients require several lumbar taps to reduce opening pressures.
- e) Some patients require acetazolamide and corticosteroids therapies.

343. All of the following conditions can cause pseudotumor cerebri **except**:
- a) Lateral sinus thrombosis

- b) Prolonged corticosteroid therapy
- c) Vitamin A deficiency
- d) Vitamin A toxicity
- e) Hyperparathyroidism

344. The following condition does **not** cause pseudotumor cerebri:
    - a) Wiskott-Aldrich syndrome
    - b) Guillain-Barre syndrome
    - c) Addison disease
    - d) Rapid withdrawal of corticosteroid therapy
    - e) Obstruction of the inferior vena cava

345. The most common organism causing secondary infection in patients with tropical acne is:
    - a) S. aureus
    - b) S. epidermidis
    - c) Pseudomonas
    - d) Group A streptococcus
    - e) Herpes simplex virus

346. The most common organism causing acne vulgaris is:
    - a) S. aureus
    - b) S. epidermidis
    - c) Pityrosporum ovale
    - d) Pseudomonas aeruginosa
    - e) Propionibacterium acnes

347. The isotretinoin therapy in women is highly teratogenic. After discontinuation of the isotretinoin, pregnancy should be avoided for:
    - a) 2 weeks
    - b) 1 month
    - c) 2 months
    - d) 3 months
    - e) 6 months

348. The following statement is **not** true about acne vulgaris:
    - a) There is a good correlation between acne severity and psychological impact, particularly in adolescents.
    - b) Early treatment does not alter the course of acne except isotretinoin therapy.
    - c) Tretinoin (Retin-A) topical application is the most effective treatment for comedonal acne.
    - d) Oral isotretinoin (13-retinoic acid, Accutane) therapy is indicated in severe, scarring acne, acne associated with severe psychological disturbances, and moderate to severe nodulocystic acne that has not responded to conventional therapy.
    - e) For comedones and papulopustular acne, the most effective topical medications are retinoic acid, benzoyl peroxide gel, adapalene, and topical antibiotics (e.g., clindamycin, erythromycin).

349. Drug-induced acne is caused by all of the following drugs **except**:
    - a) Vitamin $B_{12}$
    - b) Isoniazid
    - c) Phenobarbital
    - d) Phenytoin
    - e) Vitamin D

350. The preferred therapy for patients with carbon monoxide poisoning is:
    - a) Nitric oxide therapy
    - b) High frequency ventilation
    - c) Exchange transfusion
    - d) High concentration of carbon dioxide
    - e) High concentration of oxygen

351. The best way to diagnose carbon monoxide poisoning is:
    - a) Carbonmonoxyhemoglobin levels in the blood.
    - b) Carbon monoxide levels during expiration

c) Carboxyhemoglobin levels in the blood
d) Carboxyhemoglobin levels during inspiration
e) Arterial blood gas

352. The **antitoxin** therapy is indicated in patients diagnosed with the following disease because of biological terrorism:
a) Botulism
b) Smallpox
c) Anthrax
d) Plague
e) Tularemia

353. The preferred therapy for patients diagnosed with anthrax because of biological terrorism:
a) Ciprofloxacin
b) Gentamicin
c) Chloramphenicol
d) Ribavirin
e) Penicillin

354. The preferred therapy for patients diagnosed with plague because of biological terrorism:
a) Gentamicin
b) Penicillin
c) Erythromycin
d) Cefotaxime
e) Ceftriaxone

355. All of the following antibiotics can be used in patients diagnosed with tularemia because of bioterrorism **except**:
a) Penicillin
b) Gentamicin
c) Doxycycline
d) Ciprofloxacin
e) Chloramphenicol

356. A group of children went to Caribbean island for a vacation. A few of them developed severely pruritic papules, vesicles, and urticarial plaques over the areas of the body that is mostly covered by bathing suits. They also have fever, chills, malaise, and headache. The most likely cause is:
a) Allergic reactions to venom from larvae
b) Allergic reactions to salt water
c) Fungal skin infections
d) Pseudomonas skin infections
e) S. aureus skin infections

357. The preferred therapy for patients with seabather's eruption is:
a) Ceftazidime
b) Vancomycin
c) Amphotericin
d) Topical antifungal ointment
e) Symptomatic and potent topical corticosteroids

358. The coagulation studies (e.g., PT, PTT) are usually normal in patients with hemolytic-uremic syndrome (HUS). However, the prolongation of coagulation studies can occur in HUS. The prolongation of coagulation studies is more commonly due to the following:
a) Calcium deficiency
b) Thrombocytopenia
c) Hemolysis
d) Vitamin K deficiency
e) Leukopenia

359. All of the following conditions can cause hemolytic-uremic syndrome **except**:
a) Undercooked meat

b) Unpasteurized milk
c) Contaminated apple cider
d) Peritoneal dialysis
e) Bathing in a contaminated swimming pool

360. All of the following medications can cause hemolytic-uremic syndrome **except**:
a) Cyclosporine
b) Mitomycin
c) Pyran copolymer
d) Oral contraceptives
e) Hydralazine

361. The side effect of hydralazine medication is:
a) Bronchospasms
b) Bradycardia
c) Hyperglycemia
d) Drug-induced lupus
e) Orthostatic hypotension

362. The antihypertensive medication that causes bronchospasms is:
a) Propranolol
b) Clonidine
c) Diazoxide
d) Enalaprilat
e) Captopril

363. The preferred therapy for patients with hypertensive emergencies is:
a) Intravenous labetalol
b) Intravenous propranolol
c) Intravenous enalaprilat
d) Intravenous hydralazine
e) Intravenous phentolamine

364. All of the following therapies are indicated initially in adolescents with an essential hypertension **except**:
a) Weight reduction in obese
b) Reduce sodium intake
c) Aerobic exercise
d) Avoid tobacco
e) A small amount of red-wine (15 mL per day)

365. In a patient with hypertensive crisis, the blood pressure should be reduced to about:
a) 95% of the total planned reduction within the first 2 hours and the remaining 5% reduction over the next 4 hours.
b) 80% of the total planned reduction within the first 30 minutes and the remaining 20% reduction over the next 24 hours.
c) 33% of the total planned reduction within the first 6 hours and the remaining 67% reduction over the next 48-72 hours.
d) 20% of the total planned reduction within the first 3 hours and the remaining 80% reduction over the next 12 hours.
e) 100% within the first 3 hours in order to avoid hypertensive encephalopathy that is a potential complication.

366. The following antihypertensive medication may be avoided in patients with abnormal renal functions:
a) Nifedipine
b) Furosemide
c) Captopril
d) Propranolol
e) Nitroprusside

367. The following treatment may be curative in patients with renal artery stenosis secondary to fibromuscular dysplasia:
a) Renal arteriovenous anastomosis
b) Aortorenal anastomosis
c) Bilateral nephrectomy

d) Percutaneous balloon angioplasty of renal arteries
e) Renal artery and superior mesenteric artery anastomosis

368. The Reed-Sternberg cell is the hallmark of Hodgkin disease. The Reed-Sternberg cell arise mostly from:
a) Germinal center A-cells
b) Germinal center B-cells
c) Germinal center C-cells
d) Thyroid glands
e) Parathyroid glands

369. A 16-year-old boy appears with painless, firm, cervical and supraclavicular lymphadenopathies. He denies history of trauma or infection. The next step in management prior to lymph nodes biopsy is:
a) Chest x-ray
b) Abdominal x-ray
c) Bone marrow biopsy
d) MRI of the neck
e) Upper gastrointestinal series

370. The preferred diagnostic study for primary brain tumors is:
a) EEG
b) Lumbar tap
c) Serum alpha-fetoprotein
d) CT-scan
e) MRI

371. The most common location of brain tumors in children is:
a) Infratentorial
b) Supratentorial
c) Spinal cord
d) Multiple sites
e) Meningeal

372. The most common type of brain tumor in children **less than 1 year of age is**:
a) Choroid plexus complex tumors
b) Medulloblastomas
c) Juvenile pilocytic astrocytomas
d) Diffuse astrocytomas
e) Ependymomas

373. The most common type of brain tumor in children **from 1-10 years of age** is:
a) Juvenile pilocytic astrocytomas
b) Brainstem gliomas
c) Ependymomas
d) Craniopharyngiomas
e) Chiasmal gliomas

374. The most common type of brain tumor in children **after 10 years of age** is:
a) Diffuse astrocytomas
b) Craniopharyngiomas
c) Brainstem gliomas
d) Medulloblastomas
e) Ependymomas

375. The most common brain tumor in **pediatric age groups** is:
a) Astrocytomas
b) Craniopharyngiomas
c) Ependymomas
d) Medulloblastomas
e) Brainstem gliomas

376. All of the following drugs cause **central diabetes insipidus** by the inhibition of vasopressin release **except**:
   a) Phenytoin
   b) Methicillin
   c) Halothane
   d) Opiate antagonists
   e) Alpha-adrenergic agents

377. All of the following drugs cause **acquired nephrogenic diabetes insipidus except**:
   a) Lithium
   b) Amphotericin
   c) Rifampin
   d) Foscarnet
   e) Ethanol

378. The most common primary brain tumor associated with diabetes insipidus is:
   a) Germinomas
   b) Craniopharyngiomas
   c) Optic gliomas
   d) Histiocytosis
   e) Lymphocytic hypophysitis

379. All of the following are the complications of growth hormone therapy **except**:
   a) Leukemia
   b) Pseudotumor cerebri
   c) Breast atrophy
   d) Worsening of scoliosis
   e) Slipped capital femoral epiphysis

380. An **young infant** appears with irritability, failure to thrive, and intermittent fever. Physical examination reveals moderate to severe dehydration. The urine output is 5 mL/kg/hour. SMA6 reveals Na 157, cl 116, glucose 90, BUN 35, creatinine 0.5, and K 4.0. The serum osmolality is 330 mOsm/kg and urine osmolality is 270 mOsm/kg. The preferred therapy is:
   a) Intravenous vasopressin
   b) Intranasal vasopressin analogs
   c) Vasopressin analogs (tablet)
   d) Restrict fluid intake
   e) Large volume of fluid

381. The preferred therapy for **older children** with central diabetes insipidus **without** neurosurgical intervention is:
   a) Large volume of fluid
   b) Restrict fluid intake
   c) Intravenous vasopressin
   d) Subcutaneous vasopressin
   e) Long-acting vasopressin analog dDAVP (desmopressin)

382. The preferred therapy for patients with central diabetes insipidus following a **neurosurgical intervention** is:
   a) Large volume of fluid
   b) Restrict fluid intake
   c) Intranasal vasopressin analog
   d) Vasopressin analog (tablet)
   e) Intravenous synthetic aqueous vasopressin (pitressin)

383. All of the following conditions can present a **cherry red spot** on the retina **except**:
   a) Tay-Sachs disease ($GM_2$ type I)
   b) Sialidosis (type I and II)
   c) Sturge-Weber syndrome
   d) Generalized gangliosidosis ($GM_1$ type I)
   e) Sandhoff variant ($GM_2$ type 2)

384. All of the following conditions can present with retinal detachments **except**:
   a) Retinoblastoma
   b) Coats disease
   c) Sickle cell disease
   d) Child abuse
   e) Tuberous sclerosis

385. The most common cause of **conductive hearing loss (CHL)** in children is:
   a) Middle air fluid
   b) Perforated tympanic membrane
   c) Anomalies of the pinna
   d) Anomalies of external auditory canal
   e) Cerumen

386. The most common cause of **sensorineural hearing loss (SNHL)** in children is:
   a) Genetic
   b) Congenital rubella infection
   c) Congenital CMV infection
   d) Ototoxic medication
   e) Idiopathic

387. The most common **infectious cause of congenital sensorineural hearing loss (SNHL)** in children is:
   a) Congenital rubella infections
   b) Congenital herpes infections
   c) Congenital syphilis infections
   d) Congenital toxoplasmosis infections
   e) Congenital CMV infections

388. The most common mode of inheritance of genetic causes of sensorineural hearing loss in children is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

389. All of the following conditions are **autosomal recessive genetic causes** of sensorineural hearing loss **except**:
   a) Waardenburg syndrome
   b) Usher syndrome
   c) Pendred syndrome
   d) Jervell syndrome
   e) Lange-Nielsen syndrome

390. All of the following **anticonvulsants** can cause **Stevens-Johnson syndrome except**:
   a) Phenytoin
   b) Phenobarbital
   c) Primidone
   d) Lamotrigine
   e) Carbamazepine

391. All of the following **antibiotics** can cause **Stevens-Johnson syndrome except**:
   a) Penicillin
   b) Isoniazid
   c) Sulfonamides
   d) Cephalosporins
   e) Gentamicin

392. All of the following **infectious agents** can cause **Stevens-Johnson syndrome except**:
   a) Mycoplasma pneumoniae
   b) Mycobacterium tuberculosis

c) Herpes simplex virus
d) Group A streptococci
e) S. aureus

393. A 6-year-old boy appears with a limp and mild or intermittent pain in the anterior part of his left thigh. A physical examination reveals antalgic gait, proximal left thigh atrophy, and mild restriction of abduction and internal rotation of the left thigh. The treatment goals include all of the following **except**:
a) Elimination of infection in the left hip
b) Elimination of left hip irritability
c) Restoration and maintenance of a good left hip motion
d) Prevention of capital femoral epiphysis collapse, extrusion, or subluxation
e) Formation of spherical left femoral head

394. The following is **not** true about the treatment of Legg-Calve-Perthes disease (LCPD):
a) Observation is indicated in all children younger than 7 years of age.
b) Nonsurgical or surgical treatment is indicated in patients with a loss of containment of the femoral head or involvement of the lateral portion of the capital femoral epiphysis (CFE).
c) Nonsurgical containment (e.g., Petrie abduction casts) is less effective than surgical containment (e.g., pelvic or femoral osteotomy to contain the femoral head).
d) In addition to observation, temporary or periodic treatment with bed rest or abduction stretching exercise is also useful.
e) The Atlanta Rite Hospital orthosis helps in reciprocal motion and ambulation without crutches or external support.

395. A 9-year-old boy is diagnosed with slipped capital femoral epiphysis (SCFE). The evaluation of the following system is indicated:
a) Nervous
b) Endocrine
c) Cardiac
d) Pulmonary
e) Gastrointestinal

396. An obese 14-year-old boy appears with the pain in the right knee. He denies history of trauma. The following investigation may lead to the diagnosis:
a) Anteroposterior and Lauenstein (frog) lateral x-ray of the pelvis
b) Anteroposterior and laternal x-ray of the knee
c) Ultrasonography of the knee
d) CT-scan of the knee
e) MRI of the thigh and knee

397. A 15-yar-old girl appears with moderate to severe pain in the left hip. Physical examination reveals antalgic gait, externally rotated left hip, and lack of internal rotation of the left hip. Hip x-ray reveals the left femoral neck rotates anteriorly and the left capital femoral epiphysis remains in the acetabulum. The preferred therapy is:
a) Epiphysiodesis (closure) of the capital femoral epiphysis (CFE)
b) Observation and rest
c) Observation, rest, and periodic abduction stretching exercise
d) Petrie abduction casts
e) The Atlanta Scottish Rite hospital orthosis

398. Chondrolysis and osteonecrosis are complications of slipped capital femoral epiphysis. Chondrolysis is usually associated with the following conditions **except**:
a) More severe slips
b) More common in Whites
c) More common in blacks
d) More common in females
e) Pins or screws protruding out of femoral head

399. The mode of inheritance in patients with osteogenesis imperfecta:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive

d) X-linked dominant
e) Multifactorial

400. A normal couple had a child with osteogenesis imperfecta (OI). She is pregnant. The risk of OI in the second child is:
a) 0-2%
b) 3-4%
c) 5-7%
d) 8-10%
e) 25%

401. One couple is normal and the other couple is a mosaic carrier of osteogenesis imperfecta (OI). She is pregnant. The risk of OI in the fetus is as high as:
a) 10%
b) 25%
c) 50%
d) 75%
e) 100%

402. The number of health care visits recommended for a child **from birth up to 1 year of age (infancy)** is:
a) Five
b) Six
c) Seven
d) Eight
e) Nine

403. The number of health care visits recommended for a child **after 1 year of age (early childhood)** is:
a) Three
b) Four
c) Five
d) Six
e) Seven

404. The number of health care visits recommended for a child **from 5 years of age and up to 10 years of age (middle childhood)** is:
a) Two
b) Three
c) Four
d) Five
e) Six

405. The number of health care visits recommended for an adolescent **from 11 years of age and up to 21 years of age** is:
a) Nine
b) Ten
c) Eleven
d) Twelve
e) Thirteen

406. The following is **not** true about the feeding recommendations for older infants and children with psychosocial failure to thrive (FTT):
a) A forceful feeding is required if the child refused to eat all the time.
b) Solid foods should be given before liquids.
c) The mealtimes should be about 20-30 minutes
d) High-calorie foods are recommended and low-calorie foods should be avoided.
e) Children should eat with other people.

407. The following condition establishes the diagnosis of psychosocial failure to thrive (FTT) in a child:
a) High-calorie food intake and maintain weight
b) High-calorie liquid intake and maintain weight
c) The child is happy after admission in a hospital.

d) The child is eating well after admission in a hospital.
e) Weight gain in response to an adequate caloric intake.

408. The following condition is **not** an indication for hospitalization in children with failure to thrive:
a) Severely malnourished
b) Lack of catch-up growth
c) Monitor parent-child feeding interactions
d) Monitor caloric intake
e) Family is poor and they do not have enough food to eat.

409. The goals of hospitalization for patients with failure to thrive (FTT) are:
a) To separate the child from both parents and grandparents
b) To separate the child from other family members
c) To provide a nurse who is specialized on nutrition
d) To arrange for medical and nutritional long-term care for the child
e) To educate parents and obtain sustained catch-up growth of the child

410. The following is **not** true about the prognosis of children with failure to thrive (FTT):
a) About two thirds of children with psychosocial FTT are developmentally delayed and have social and emotional problems.
b) Both organic and psychosocial FTT in first year of life is ominous because this is the vital time for brain developments.
c) The prognosis for organic FTT depends upon the underlying conditions.
d) All children with FTT need ongoing monitoring of cognitive development.
e) All children with FTT need ongoing monitoring of emotional development.

411. A child is evaluated for trauma in a community hospital. His weight is 17 kg and airway is maintainable. His systolic blood pressure is 80 mm Hg. A physical examination reveals a minor open wound, minor closed fracture, and loss of consciousness. The next step in the management is:
a) Admit the patient in a regular pediatric floor unit.
b) Stabilize the patient and then refer to a pediatric trauma center.
c) Stabilize the patient and follow up as an outpatient in 24 hours.
d) Stabilize the patient and then admit in a pediatric special care unit
e) Stabilize the patient and follow up as an outpatient after 7 days.

412. A child is evaluated for trauma in a pediatric trauma center. Her weight is 30 kg and airway is maintainable. Her systolic BP is 100 mm Hg. Physical examination reveals major multiples wounds, open multiple fractures, and a decerebrate posture. The total pediatric trauma score for this patient is:
a) minus 4
b) minus 2
c) plus 2
d) plus 3
e) plus 4

413. An infant was brought to the emergency room after a motor vehicle accident with an altered level of consciousness. He opens his eyes with painful stimulations. He is restless and agitated. He has a flexion motor response. The next step in the management is:
a) Mechanical ventilation and monitoring of an intracranial pressure (ICP) may be required.
b) Give oxygen by nasal canula and reevaluate after 15 minutes.
c) Give oxygen by face mask, obtain arterial blood gas, and reevaluate after the ABG results.
d) Give oxygen by face mask, and boluses with normal saline until the BP becomes normal.
e) Give oxygen by nasal canula and wait for the pediatric neurologist to make the final decision.

414. A child is brought to the ER by an ambulance after a motor vehicle accident. He is receiving oxygen by face mask. His neck is stabilized. He is breathing 8 breaths per minute. His systolic BP is 76 mm Hg. The Glasgow Coma scale score is 8. The following statement is true about this patient.
a) He does not have a serious injury.
b) He should be stabilized in the ER and then, follow up as on outpatient.
c) He should receive several normal saline boluses to maintain the normal BP.
d) He may receive mechanical ventilation.
e) He should be sent for anteroposterior and lateral x-rays of the neck because his condition is stable.

415. A child with Williams syndrome has a deletion in chromosome:
   a) 5
   b) 7
   c) 9
   d) 11
   e) 15

416. A child with velocardiofacial syndrome has a deletion in chromosome:
   a) 8
   b) 13
   c) 18
   d) 21
   e) 22

417. A child with Angelman syndrome has a deletion in chromosome:
   a) 1
   b) 13
   c) 15
   d) 18
   e) 21

418. A child with Prader-Willi syndrome has a deletion in chromosome:
   a) 4
   b) 11
   c) 15
   d) 20
   e) 22

419. A newborn appears with a high forehead, upward slanting of palpebral fissures, epicanthal folds, hypoplastic supraorbital ridges, hypotonia, neonatal seizures, and eye abnormalities (e.g., Brushfield spots, cataracts, glaucoma, corneal clouding, and optic nerve dysplasia). The most likely diagnosis is:
   a) Down syndrome
   b) Zellweger syndrome
   c) Klinefelter syndrome
   d) Williams syndrome
   e) Infantile refsum disease

420. The most effective screening strategy to detect the Down syndrome fetus is:
   a) Triple test
   b) Quadruple test
   c) Combined test
   d) Integral test
   e) Absence of nasal bones

421. All of the following fetal conditions **increase** the maternal serum alpha-fetoprotein (MSAFP) levels **except**:
   a) Trisomy 18
   b) Meningomyelocele
   c) Gastroschisis
   d) Omphalocele
   e) Congenital nephrosis

422. All of the following fetal conditions **decrease** the maternal MSAFP levels **except**:
   a) Trisomy 18
   b) Trisomy 21
   c) Twins
   d) Incorrect gestational age
   e) Intrauterine growth retardation

423. A preterm infant is diagnosed with bronchopulmonary dysplasia (BPD). The treatment for BPD includes all of the following **except**:
  a) Adequate fluid therapy
  b) Adequate nutritional therapy
  c) Bronchodilator therapy
  d) Diuretic therapy
  e) In severe cases, inhaled nitric oxide therapy

424. The most common cause of postnatal infections in hospitalized newborns is:
  a) Family member's contaminated hands
  b) Mother's contaminated hands
  c) Mother's contaminated breast milk
  d) Health care personnel's contaminated hands
  e) Hospital's contaminated equipment

425. The most common method of spread of postnatal meningitis is:
  a) Hematogenous
  b) Neuronal
  c) Direct spread from open neural tube defects
  d) Penetrating wounds from fetal scalp monitoring
  e) Penetrating wounds from fetal internal EKG monitoring

426. All of the following organisms cause neonatal meningitis. However, one of them is an important cause of brain abscess:
  a) GBS
  b) E. coli
  c) L. monocytogenes
  d) S. pneumoniae
  e) Citrobacter diversus

427. The following statement is **not** true about early-and late-onset neonatal infections:
  a) Term male infants have a two-fold higher incidence of sepsis than that of term female infants.
  b) Intrapartum antibiotics are used to reduce early-onset GBS infections in newborns.
  c) Intrapartum antibiotics are used to reduce late-onset GBS infections in newborns.
  d) Intrapartum antibiotic prophylaxis may increase E. coli infections in very-low-birth-weight (VLBW) infants.
  e) Meningitis develops less than 20% of newborn infants with early-onset bacterial infections.

428. Scoliosis is typically manifested in females during this year of peak height velocity:
  a) 10 years
  b) 11 years
  c) 12 years
  d) 13 years
  e) 14 years

429. Scoliosis is typically manifested in males during this year of peak height velocity:
  a) 12 years
  b) 13 years
  c) 14 years
  d) 15 years
  e) 16 years

430. A 12-year-old girl came for a routine physical examination that reveals a scoliosis. The x-ray of the spine reveals 11 degrees curvature. She is completely asymptomatic. The next step in management is:
  a) Refer to an orthopedist
  b) MRI of the spine
  c) CT-scan of the spine
  d) Spinal casting
  e) Reassurance

431. The most common organism responsible for peritonitis associated with a peritoneal dialysis catheter is:
   a) S. aureus
   b) Streptococci
   c) E. coli
   d) Pseudomonas
   e) Coagulase-negative staphylococci

432. The most common cause of an infection in patients with an orthopedic implant:
   a) Introduction of microorganisms during surgery
   b) Contaminated implant from a manufacturer
   c) Hematogenous
   d) Introduction of microorganisms before surgery
   e) Introduction of microorganisms after surgery

433. A 14-year-old boy appears with a fever, pain, and wound infection in his right thigh. He required a orthopedic implant 3 weeks ago in his right thigh. The next step in management is:
   a) Remove the implant immediately
   b) Start systemic antibiotics after appropriate cultures
   c) Start oral antibiotics and follow up in clinic after 10 days
   d) Start local antibiotics ointment after appropriate cultures
   e) Irrigate the wound with normal saline

434. A 16-year-old boy appears with a recent onset of pain and deterioration of the functions of his leg orthoses that were inserted 3 months ago. The next step in management is:
   a) Start systemic antibiotics and prosthesis may be removed
   b) Keep the prosthesis and give oral antibiotics
   c) Start oral antibiotics and follow up in clinic after 10 days
   d) Start local antibiotics and follow up in clinic
   e) Reassurance

435. The most common type of Aspergillus infection in children is:
   a) Aspergillus fumigatus
   b) Aspergillus flavus
   c) Aspergillus niger
   d) Aspergillus nidulans
   e) Aspergillus terreus

436. Atopic asthma may occur due to inhalation of Aspergillus spores. The bronchospasms are due to the release of:
   a) IgA
   b) IgM
   c) IgE
   d) Toxin
   e) IgG

437. All of the following are diagnostic criteria for allergic bronchopulmonary aspergillosis **except**:
   a) Distal bronchiectasis
   b) History of previous pulmonary infiltrates
   c) Serum antibodies against A. fumigatus
   d) Peripheral smear reveals eosinophilia
   e) Elevated total serum IgE levels

438. The treatment for patients with hypersensitivity pulmonary syndromes (e.g., allergic bronchopulmonary aspergillosis, extrinsic alveolar alveolitis) is:
   a) Cefotaxime
   b) Amphotericin
   c) Vancomycin
   d) Penicillin
   e) Prednisone

439. The carrier state of cystic fibrosis is resistant to the following infection:
   a) Enteropathogenic E. coli
   b) Malaria
   c) Salmonella
   d) Shigella
   e) Pneumococcal

440. The carrier state of the sickle cell disease is resistant to the following infection:
   a) Malaria
   b) Cholera
   c) Tuberculosis
   d) H. influenzae type b
   e) Enterococcus

441. The risk for having malformed offspring in a first cousin marriage is:
   a) 2-3%
   b) 4-5%
   c) 6-8%
   d) 9-10%
   e) 25%

442. The following statement is true about females with a fragile x-syndrome:
   a) All females have a severe mental retardation
   b) All females have an enlarged clitoris
   c) All females have a speech disorders
   d) All females have an enlarged ovaries
   e) They have varying degrees of mental retardation.

443. A child appears with coarsed face, localized alopecia, pigmented skin, cardiovascular defects, mild diaphragmatic hernia, and a severe mental retardation. The most likely diagnosis is:
   a) Fragile x-syndrome
   b) Down syndrome
   c) Turner syndrome
   d) Noonan syndrome
   e) Pallister-Killian syndrome

444. The risk of an allergic disease in a child when one parent is allergic is:
   a) 5%
   b) 10%
   c) 25%
   d) 50%
   e) 66%

445. The risk of allergic disease in a child when both parents are allergic is:
   a) 25%
   b) 50%
   c) 66%
   d) 75%
   e) 100%

446. All of the following chromosomes have been strongly associated with **atopic diseases except**:
   a) 5
   b) 6
   c) 11
   d) 12
   e) 13

447. All of the following chromosomes have been linked with an **atopic dermatitis** by genome screens **except**:
   a) 1

- b) 3
- c) 17
- d) 20
- e) 21

448. The following toxin causes **scalded skin syndrome** secondary to S. aureus infections:
- a) Exfoliatin
- b) Enterotoxin
- c) Alpha-toxin
- d) Protein A
- e) Coagulase

449. A patient develops **food poisoning** secondary to S. aureus infections. The following toxin responsible for food poisoning is:
- a) Enterotoxin
- b) Protein A
- c) Alpha-toxin
- d) Beta-hemolysin
- e) Gamma-hemolysin

450. A child develops **toxic shock syndrome** secondary to S. aureus infections. The following toxin responsible for toxic shock syndrome is:
- a) Alpha-toxin
- b) Leukocidin
- c) Catalase
- d) Toxic shock syndrome toxin-1
- e) Toxic shock syndrome toxin-3

451. A child develops an **abscess, a boil, and sinusitis** secondary to S. aureus infections. The following enzyme is responsible for these clinical manifestations:
- a) Coagulase
- b) Catalase
- c) Penicillinase
- d) beta-lactamase
- e) Lipase

452. Adhesions of S. aureus to mucosal cells are mediated by the following:
- a) Sialic acid
- b) Slime
- c) Protein A
- d) Peptidoglycan
- e) Teichoic acid

453. The **slime layer** is produced by the following organism:
- a) S. epidermidis
- b) S. pneumoniae
- c) H. influenzae
- d) E. coli
- e) Klebsiella

454. The protein A may be present in all of following organisms **except**:
- a) S. aureus
- b) S. epidermidis
- c) S. saphrophyticus
- d) S. hemolyticus
- e) S. schleiferi

455. Kaposi sarcoma is strongly associated with the following organism:
- a) Human herpesvirus 6
- b) Human herpesvirus 7

c) Cytomegalovirus
d) Human herpesvirus 8
e) Herpes simplex virus type 1

456. Roseola (exanthem subitum, sixth disease) infection is due to the following organisms:
a) Human herpesvirus 5
b) Human herpesvirus 6
c) Human herpesvirus 8
d) Herpes simplex virus type 1
e) Herpes simplex virus type 2

457. The following statement is **not** true about the immunization schedule for HIV-infected children:
a) Influenza vaccines should be given every year beginning from 6 months of age to all-HIV infected children.
b) Pneumococcal conjugate vaccines (PCV) should be given from 2 months, 4 months, 6 months, between 12-15 months, and pneumococcal polysaccharide vaccine (PPV) every 5 years beginning in 10 years of age to all HIV-infected children.
c) The hepatitis A vaccine should be given in all HIV-infected children beginning from 2 years of age.
d) Two MMR vaccines should be given to all HIV-infected children between 12-15 months and 4-6 years of age.
e) Varicella vaccines can be given in HIV-infected children with categories A (mild disease) and B (moderate disease) beginning from 12 months of age.

458. A 2-day-old newborn develops poor feeding, vomiting, fever, and restlessness. She was born by NSVD with good Apgar scores. The mother came from India 2 weeks ago. The mother stated that she received malaria chemoprophylaxis. A physical examination reveals pallor, jaundice, mild cyanosis, and hepatosplenomegaly. The cyanosis improved after oxygen therapy. The patient is transferred to the NICU from the regular nursery. A sepsis work up is performed. Intravenous ampicillin and gentamicin are given. Her clinical conditions did not improve after 24 hours despite intravenous antibiotics and fluid therapies. Herpes cultures are performed and intravenous acyclovir are added. After 48 hours, her blood culture is still negative. Herpes cultures came back negative after 3 days. The most likely diagnosis is:
a) Congenital malaria
b) GBS infection
c) E. coli infection
d) Klebsiella infection
e) Pseudomonas infection

459. The best diagnostic study for malaria is:
a) Giemsa-stained smears of peripheral blood
b) Wright-stained smears of peripheral blood
c) Leishman-stained smears of peripheral blood
d) Blood culture
e) Liver biopsy

460. The preferred treatment for hypophosphatemia secondary to nutritional vitamin D deficiency is:
a) Increase dietary phosphorus intake
b) Oral phosphorus therapy
c) Intravenous phosphorus therapy
d) Oral phosphorus and calcium therapies
e) Oral vitamin D therapy

461. The preferred treatment for x-linked hypophosphatemic rickets is:
a) Oral phosphorus therapy
b) Oral vitamin D therapy
c) 1, 25-vitamin D and phosphorus
d) 1, 25-vitamin D, calcium, and phosphorus
e) Intravenous calcium and phosphorus

462. The most common cause of hyperphosphatemia in children:
a) Excessive phosphorus intake
b) Excessive calcium intake
c) Excessive vitamin D intake

d) Decreased liver functions
e) Decreased renal functions

463. The preferred method to calculate the deficits of water and electrolytes in patients with dehydration is:
a) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 40 mEq/L),
potassium deficit (water deficit x 20 mEq/L)
b) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 50 mEq/L),
potassium deficit (water deficit x 25 mEq/L)
c) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 60 mEq/L),
potassium deficit (water deficit x 30 mEq/L)
d) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 70 mEq/L),
potassium deficit (water deficit x 35 mEq/L)
e) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 80 mEq/L),
potassium deficit (water deficit x 30 mEq/L)

464. The following statement is **not** true about the fluid management in patients with dehydration:
a) First, restore the intravascular volume by infusing normal saline (20 mL/kg) over 20 minutes and repeat until the intravascular volume is restored (i.e., blood pressure becomes normal).
b) Second, calculate the 24 hour water requirements (i.e., maintenance and deficit)
c) Third, calculate the 24 hour electrolytes requirements (i.e., maintenance and deficit of sodium and potassium)
d) Fourth, infuse half of the calculated fluid over the first 8 hours but subtract the boluses from this amount, and then infuse the remaining half over the next 16 hours.
e) Fifth, replacement of ongoing losses is indicated if the child is unstable.

465. The following statement is **not** true about the fluid management in patients with hypernatremic dehydration:
a) First, restore the intravascular volume by infusing normal saline (20 mL/kg) over 20 minutes and repeat until the intravascular volume is restored (i.e., blood pressure becomes normal).
b) Second, total fluid correction time depends upon the sodium levels (i.e., correction time is 48 hours when sodium levels are 145-170 mEq/L and correction time is 72 hours when sodium levels are 171-196 mEq/L).
c) Third, fluid (D5 ¼ normal saline or D5 ½ normal saline, and KcL 20 mEq/L unless contraindicated) should be infused at a constant rate (usually 1.25-1.5 times maintenance).
d) Fifth, replace ongoing losses as indicated
e) The rapid decrease of sodium is managed by increasing the concentration of sodium and decreasing the intravenous fluid rate; the very slow decrease of sodium is managed by decreasing the concentration of sodium and increasing the intravenous fluid rate.

466. The most common mistake in administering parenteral fluid during and after surgery is:
a) Infuse decreased amount of fluid
b) Infuse potassium with the fluid
c) Infuse sodium bicarbonate with the fluid
d) Infuse excessive sodium with the fluid
e) Infuse excessive amount of fluid

467. The recommended intravenous fluid therapy before surgery for a patient with pyloric stenosis is:
a) Saline (0.45-0.9%), dextrose (5-10%), and potassium chloride (30-50 mEq/L)
b) Saline (0.2-0.45%), dextrose (10-12%), and potassium chloride (5-10 mEq/L)
c) Saline (0.9%), dextrose (10%), and potassium chloride (10-20 mEq/L)
d) Saline (3%), dextrose (12%), and potassium chloride (30-50 mEq/L)
e) Saline (1.5%), dextrose (5%), and potassium chloride (20-30 mEq/L)

468. The following statement is **not** true about pyloric stenosis:
a) It is preferable to delay the surgery for at least 24-48 hours.
b) Hypochloremic metabolic alkalosis should not be corrected with ammonium chloride.

c) Fluid therapy should be continued until the infant is fully rehydrated and the metabolic alkalosis is corrected (i.e., serum bicarbonate level is less than 30 mEq/dL).
d) Most infants require nasogastric suctioning.
e) The presence of an acid urine with metabolic alkalosis indicates hypokalemia.

469. The Ramstedt pyloromyotomy was performed on a patient with pyloric stenosis. The oral feedings should begin:
a) Within 4-6 hours after surgery
b) Within 12-24 hours after surgery
c) Within 24-48 hours after surgery
d) Within 48-72 hours after surgery
e) Within 72-96 hours after surgery

470. A 2-week-old infant is persistently vomiting after Ramstedt pyloromyotomy. The surgeon admitted that the pyloromyotomy was incomplete. The next step in management is:
a) Repeat the surgical procedure
b) Conservative therapy with small oral feedings
c) Conservative therapy with atropine
d) Endoscopic balloon dilatation
e) Reassurance

471. The genital examination of a boy reveals a slightly enlarged penis; a pink, enlarged scrotum; scanty, long, slightly pigmented pubic hairs. The sexual maturity rating (SMR) for this boy is:
a) Stage 1
b) Stage 2
c) State 3
d) Stage 4
e) Stage 5

472. The genital examination of a boy reveals a longer penis; larger testes; darker, beginning to curl, scanty pubic hairs. The sexual maturity rating (SMR) for this boy is:
a) Stage 1
b) Stage 2
c) State 3
d) Stage 4
e) Stage 5

473. The genital examination of a boy reveals a larger penis; a larger, dark scrotum; coarse, curly pubic hairs like an adult but less in quantity. The sexual maturity rating (SMR) for this boy is:
a) Stage 1
b) Stage 2
c) State 3
d) Stage 4
e) Stage 5

474. The physical examination of a girl reveals a sparse, lightly pigmented, straight pubic hairs along the medial border of the labia; increased both areolar diameters, elevated breasts and papillae as a small mound. The sexual maturity rating (SMR) for this girl is:
a) Stage 1
b) Stage 2
c) State 3
d) Stage 4
e) Stage 5

475. The physical examination of a girl reveals an increased amount of darker and beginning to curl pubic hairs; both breasts and areolae are enlarged but no contour separation. The SMR staging for this girl is:
a) Stage 1
b) Stage 2
c) State 3

d) Stage 4
e) Stage 5

476. The physical examination of a girl reveals a course, curly, abundant pubic hairs; both areola and papilla form secondary mounds. The SMR staging for this girl is:
a) Stage 1
b) Stage 2
c) State 3
d) Stage 4
e) Stage 5

477. The following statement is **not** true about the basic principles of sleep hygiene for children:
a) A child's bedtime and wake-up time should be about the same from Mondays to Fridays (school days) and about 2-3 hours more wake-up time for weekends (Saturdays, Sundays, and holidays) to achieve catch-up sleep and growth.
b) A child should have a set bedtime and routine for the bedtime.
c) A child should **not** watch TV, play computer games, or rough play (i.e., high-energy activities) just before bedtime.
d) A child should be allowed to have light snacks (e.g., milk and cookies) before bedtime to avoid hunger during sleep.
e) A child should not be allowed to drink caffeinated sodas, chocolate, tea, and coffee at least several hours before bedtime.

478. All of the following statements are true about the basic principles of sleep hygiene for adolescents **except**:
a) An adolescent should quit smoking or to avoid smoking at least one hour before bedtime.
b) An adolescent should not drink alcohol.
c) An adolescent should not take sleeping pills, sleeping aids, or melatonin unless prescribed by a physician.
d) An adolescent should not consume caffeinated drinks (e.g., tea, coffee, sodas, and chocolate) beginning from the dinner time until the morning.
e) An adolescent can study on his/her bed quietly and then, goes to sleep comfortably.

479. The following statement is **not** true about patients with Gilles de la Tourette syndrome:
a) This syndrome is more common in patients with an affected first-degree relative than that of the general population.
b) This syndrome is characterized by motor and vocal tics (e.g., barking, grunting, rarely shouting obscene words).
c) The motor and vocal tics should be present concurrently to make the diagnosis.
d) This syndrome is more common in boys than girls.
e) This syndrome is more common in whites than other races.

480. All of the following conditions are associated with the Gilles de la Tourette syndrome **except**:
a) Group A streptococcal infections
b) Staphylococcus aureus infections
c) Attention deficit/hyperactivity disorders (ADHD)
d) Obsessive-compulsive disorders (OCD)
e) Oppositional-defiant disorders (ODD)

481. A 9-year-old boy appears with history of pharyngitis for the past 3 days. The mother noticed that he suffered from some abnormal body movements and had been making barking and grunting sounds for the past 16 hours. The mother is worried. The parents are separated 1 year ago. The most likely diagnosis is:
a) Chlamydia pharyngitis infection
b) Viral pharyngitis infection
c) Separation anxiety disorder (SAD)
d) Generalized anxiety disorder (GAD)
e) Pediatric autoimmune neuropsychiatric disorders associated with a streptococcal infection (PANDAS)

482. The treatment for patients with PANDAS includes all of the following **except**:
a) Antibiotic (e.g., penicillin, amoxicillin) therapy is given for an acute infection.
b) Prophylactic antibiotic therapy is **not** indicated.
c) Intravenous immunoglobin may be used during an acute infection.
d) Therapeutic plasma exchange can be performed in severe cases
e) Supportive therapies

483. The following treatment is **not** indicated in a patient with Gilles de la Tourette syndrome:
   a) Psychostimulants should be used to control the tics.
   b) Supportive therapies from organizations like Tourette's syndrome association
   c) The neuroleptics (e.g., risperidone, olanzapine) are commonly used.
   d) The dopaminergic antagonist (e.g., haloperidol, pimozide) can reduce the severity of the tics.
   e) Botulinum toxin is effective to control motor tics.

484. The composition of Ringler lactate solution is:
   a) Na 154, cl 154, K 4, Ca 3, lactate 28
   b) Na 130, cl 109, K 4, Ca 3, lactate 28
   c) Na 135, cl 109, K 1, Ca 2, lactate 40
   d) Na 140, cl 120, K 3, Ca 3, lactate 30
   e) Na 145, cl 125, K 2, Ca 1, lactate 20

485. The following is **not** true about the maintenance of fluid therapy in children:
   a) The maximum total fluid per day is usually 2,400 mL (i.e., 100 mL/hour)
   b) The maintenance sodium is 4-5 mEq/kg/day and potassium is 2-3 mEq/kg/day
   c) A child that weighs 15 kg should receive total fluid 1250 mL per day.
   d) A child that weighs 25 kg should receive total fluid 1800 mL per day.
   e) A child that weighs 9 kg should receive total fluid 900 mL per day.

486. The parinaud oculoglandular syndrome occurs most likely due to:
   a) S. aureus
   b) Bartonella quintana
   c) Bartonella henselae
   d) Bartonella bacilliformis
   e) Bartonella elizabethae

487. A 6-year-old boy appears with left axillary lymphadenopathy. The mother noticed the enlarged axillary glands for the last 2 months. He also complains redness and pain in that area. The mother denies cat scratch. However, she bought a kitten 6 months age. The mother has six other children at home. The most likely diagnosis:
   a) S. aureus infection
   b) Pseudomonas infection
   c) S. epidermidis infection
   d) Herpes simplex infection
   e) Bartonella henselae infection

488. The diagnosis of cat-scratch disease (CSD) is strongly suspected by:
   a) Clinical findings with the history of exposure to a cat
   b) IgA for the B. henselae
   c) IgG for the B. henselae
   d) Culture of B. henselae
   e) Skin test antigen by heat-treating purulent aspirate from a CSD nodule

489. The preferred therapy for patients with a cat-scratch disease:
   a) Observation and conservative symptomatic therapy
   b) Azithromycin
   c) Clarithromycin
   d) Ciprofloxacin
   e) Rifampin

490. The following statement is **not** true about the management of a newborn born to a woman with **primary active genital infections at the time of delivery:**
   a) A cesarean section is indicated within 30 hours (preferably 6 hours) of ruptured membranes.
   b) A CSF analysis, culture, and HSV DNA polymerase chain reaction (PCR) are indicated prior to acyclovir therapy.
   c) A newborn who was delivered by a cesarean section, cultures of eyes, nose, mouth, urine, and stool should be performed at 48 hours.
   d) If the vaginal delivery is unavoidable, a culture of eyes, nose, mouth, urine, and stool should be performed, and acyclovir therapy should be started.

e) The infant who was born by a cesarean section should be treated with acyclovir if any signs of a HSV infection or culture is positive.

491. All of the following statements are true about the management of a newborn born to a woman with **recurrent active genital infections at the time of delivery except**:
a) A cesarean section is indicated within 24 hours (preferably within 4 hours) of ruptured membranes.
b) A CSF analysis, culture and HSV DNA PCR are indicated prior to acyclovir therapy.
c) A newborn who was delivered by a cesarean section, cultures of eyes, nose, mouth, urine, and stool should be performed at 48 hours.
d) A newborn who was delivered by NSVD, cultures of eyes, nose, mouth, urine, and stool should be performed at birth.
e) A newborn who was delivered either by NSVD or a cesarean section, acyclovir therapy is indicated if any signs of a HSV infection or culture is positive.

492. A 20-month-old boy is afraid to seat on the toilet. His mother is 19 years old. She is worried. She wants her son to become toilet trained as early as possible. The next step in the management:
a) She should be encouraged for her efforts as a concerned mother.
b) The physician should teach her proper methods of early toilet training.
c) Early toilet training (less than 2 years of age) should be discouraged.
d) The mother should continue to do whatever necessary to make her child toilet trained.
e) The physician should arrange for a conference with the mother, the child, and the social worker.

493. All children should be monitored for obesity at the age of:
a) 6 months
b) 1 year
c) 2 years
d) 3 years
e) 4 years

494. All children should have blood pressure measurements at every well child visit at the age of:
a) 1 year
b) 2 years
c) 3 years
d) 4 years
e) 5 years

495. All of the following are risk factors for developing cardiovascular diseases in children **except**:
a) A child with elevated lipid levels
b) A child with a high blood pressure
c) The family history of a premature cardiovascular disease in a parent (less than 55 years of age) or grandparent
d) The family history of high blood cholesterol levels
e) A 22-month-old child with a body weight that is above 97th percentile for his/her age.

496. Pediatricians should encourage children to participate in the following activity:
a) Hot-dog eating contest
b) Play educational video games
c) Watch educational games on TV
d) Participate on educational TV shows
e) Participate in active physical exercise

497. Pediatrics should tell parents that their children should not exceed watching TV and playing video games:
a) 1-2 hours per day
b) 2-3 hours per day
c) 3-4 hours per day
d) 4-5 hours per day
e) 5-6 hours per day

498. The most preventable cause of mortality and morbidity in USA:
a) Fire arms
b) Alcohol use

c) Fatty foods
d) HIV infections
e) Cigarette smoking

499. The following statement is **not** true about children with temper tantrums:
a) Temper tantrums are not normal for children.
b) A positive remark made at the time of temper tantrum may reduce the feelings of frustration.
c) The length of time-out is approximately 1 minute per year of age.
d) The contributing factors (e.g., hunger, lack of sleep, family violence, parental depression) should be determined and handled accordingly.
e) Parents should be clear and consistent in their requests for compliance.

500. The management of children with nightmares or night terrors is:
a) To relax the child
b) To ignore the child's dream
c) To stop watching scarry movies in TV at night
d) To stop playing violent video games
e) To prescribe a mild sedative before bedtime.

501. A child wakes up frightened and agitated. He does not remember the incident. The most likely diagnosis is:
a) Nightmares
b) Night terrors
c) Diabetic keto acidosis
d) Child abuse
e) Separation anxiety disorder (SAD)

502. The Freud psychoanalytic theory in infancy (0-1 year) includes the following:
a) Oral
b) Anal
c) Oedipal
d) Latency
e) Genital

503. The Freud psychoanalytic theory in toddlerhood (2-3 years) includes the following:
a) Oral
b) Anal
c) Oedipal
d) Latency
e) Genital

504. The Freud psychoanalytic theory in preschool (3-6 years) includes the following:
a) Oral
b) Anal
c) Oedipal
d) Latency
e) Genital

505. The Freud psychoanalytic theory in middle childhood (6-12 years) includes the following:
a) Oral
b) Anal
c) Oedipal
d) Latency
e) Genital

506. The Freud psychoanalytic theory in the adolescence (12-18 years) includes the following:
a) Oral
b) Anal
c) Oedipal

d) Latency
e) Genital

507. The psychosocial theory is introduced by:
a) Newton
b) Einstein
c) Freud
d) Erikson
e) Piaget

508. The cognitive theory is introduced by:
a) Newton
b) Einstein
c) Freud
d) Erikson
e) Piaget

509. The psychosexual theory is introduced by:
a) Newton
b) Einstein
c) Freud
d) Erikson
e) Piaget

510. According to Erikson, the child's sense of basic trust develops in:
a) Infancy
b) Toddlerhood years
c) Preschool years
d) Middle school years
e) Adolescence

511. Piaget's work is important to pediatricians because of all of the following **except**:
a) It provides open-ended questions
b) It provides insights for a child's understanding of illness and hospitalization.
c) It resolves many puzzling behaviors of infancy.
d) It needs a little special equipment in the doctors office.
e) It detects a sense of autonomy in toddlers.

512. The following component represents a double peak (two peaks) in brain growth is:
a) Brain weight
b) Cholesterol
c) Brian cortex
d) Ventricle
e) DNA

513. The following statement is **not** true about Pediatric Risk of Mortality (PRISM):
a) The PRISM is used for decision making in a single patient.
b) The PRISM III represents the physiologic conditions of children.
c) The PRISM III can be used to compare and evaluate the performance and resource used among different PICUs (Pediatric Intensive Care Units).
d) The PRISM is most useful in evaluating case mix adjustments between units and the overall outcomes for a population of patients in a PICU.
e) The PRISM score has a good correlation between the number of malfunctioning organ systems at 12 hours and 24 hours, and the mortality risk in the PICU.

514. The PRISM III (Pediatric Risk of Mortality) evalutes all of the following systems **except**:
a) Cardiovascular
b) Neurologic
c) Hematology

d) Renal
e) Liver

515. The PRISM III includes all of the following parameters of SMA6 **except**:
a) Na
b) K
c) Glucose
d) BUN
e) Creatinine

516. The PRISM III includes all of the following hematologic values **except**:
a) WBC counts
b) Hematocrit
c) Platelet counts
d) PT
e) PTT

517. All of the following values are includes in the PRISM III scoring system **except**:
a) Glassgow Coma Scale
b) ABG
c) Pupillary reflex
d) Systolic blood pressure
e) Respiratory rate

518. Then following disease does **not** have an increased incidence in a child-care facility:
a) Hepatitis A
b) Otitis media
c) Varicella
d) Pneumonia
e) Polio

519. All of the following conditions responsible for development of bacterial resistance to antibiotics in a child-care facility **except**:
a) Increased frequency of antibiotic use
b) Increased duration of antibiotic use
c) Person-to-person transmission of pathogens
d) Increased annual rate of antibiotic use than that of children at home
e) Increased development of new drugs

520. The following is an indication of giving an **oral polio vaccine** in children who will be traveling to an endemic or epidemic areas:
a) A 6 months old child who received three doses of IPV.
b) A 4 months old child who received two doses of IPV.
c) A 3 months old child who is immunocompromised and received 1 dose of IPV.
d) A 2 months old child whose mother is immunocompromised and the child received 1 dose of IPV.
e) A 6 weeks old child who did not receive any vaccination yet and will be traveling in less than 4 weeks.

521. The preferred drug used as a prophylaxis during perioperative period of **appendectomy**:
a) Gentamicin
b) Cefoxitin
c) Ampicillin
d) Ceftazidime
e) Clindamycin

522. The preferred drug used as a prophylaxis during perioperative period of a **genitourinary surgery** is:
a) Cefoxitin
b) Gentamicin
c) Ampicillin
d) Clindamycin
e) Vancomycin

523. The preferred drug used as a prophylaxis during perioperative period of a **colonic surgery** is:
   - a) Oral azithromycin
   - b) Oral gentamicin
   - c) IV gentamicin
   - d) Vancomycin
   - e) Oral decontamination with neomycin and erythromycin, then cefazolin

524. A child appears with bilateral conjunctivitis. He complains of severe pruritus, photophobia, lacrimation, and foreign-body sensation. A physical examination reveals eye discharge, cobblestoning on the upper tarsal plate, Trantas dots on the limbus, and Dennie lines on the lower lids. The most likely diagnosis is:
   - a) Contact allergy
   - b) Foreign-body in conjunctiva
   - c) Allergic conjunctivitis
   - d) Giant papillary conjunctivitis
   - e) Vernal keratoconjunctivitis

525. A child was eating fresh fruits and vegetables. Suddenly, he develops a rapid onset of pruritus, tingling, and tightness of the throat. A physical examination reveals angioedema of the lips, tongue, palate, and throat. The most likely diagnosis is:
   - a) Allergic eosinophilic esophagitis
   - b) Food-induced pharyngitis
   - c) Food-protein tonsillitis
   - d) Food-induced glossitis
   - e) Oral allergy syndrome

526. All of the following disorders of phagocytic functions are autosomal recessive **except**:
   - a) Chediak-Higashi syndrome
   - b) Specific granule deficiency
   - c) Leukocyte adhesion deficiency 1
   - d) Leukocyte adhesion deficiency 2
   - e) Hyperimmunoglobulin E syndrome

527. The preferred therapy for patients with a severe pain:
   - a) NSAIDs
   - b) Aspirin
   - c) Acetaminophen
   - d) SSRI
   - e) Morphine

528. The most severe side effect of acetaminophen use in children:
   - a) Renal injury
   - b) GI bleeding
   - c) Liver failure
   - d) Cardiovascular injury
   - e) Platelet dysfunction

529. A patient-controlled analgesia (PCA) can be used in children as early as:
   - a) 1-2 years of age
   - b) 3-4 years of age
   - c) 5-6 years of age
   - d) 7-8 years of age
   - e) 9-10 years of age

530. All of the following conditions suggest nonphysiologic jaundice **except**:
   - a) Jaundice persists after 10-14 days
   - b) Direct-reacting bilirubin is more than 2 mg/dL
   - c) Jaundice appears after 2-3 days
   - d) The rate of rising serum bilirubin is more than 5 mg/day
   - e) The serum bilirubin level is more than 10-14 mg/dL in preterm infants.

531. The infants may have all of the following complications if the mother abused cocaine during pregnancy **except**:
   a) Intrauterine growth retardation
   b) Developmental delay
   c) Learning disabilities
   d) Impaired auditory information processing
   e) Moderate withdrawal symptoms

532. The **short-term** adverse effects in a patient with atopic dermatitis who received phototherapy include all of the following **except**:
   a) Erythema
   b) Skin pain
   c) Pruritus
   d) Skin cancer
   e) Pigmentation

533. The **long-term** adverse effect in a patient with atopic dermatitis who received phototherapy is:
   a) Hyperpigmentation
   b) Hypopigmentation
   c) Chronic pain
   d) Chronic itching
   e) Predisposition to skin cancer

534. A child appears with itching, skin flushing, and hepatopathy. The most likely diagnosis is:
   a) Vitamin A toxicity
   b) Niacin toxicity
   c) Vitamin $B_6$ deficiency
   d) Vitamin K toxicity
   e) Vitamin $B_2$ deficiency

535. A child appears with diarrhea, dermatitis, and dementia. The most likely diagnosis is:
   a) Niacin deficiency
   b) Vitamin $B_{12}$ deficiency
   c) Vitamin $B_1$ deficiency
   d) Vitamin A deficiency
   e) Folic acid deficiency

536. The diagnostic criteria of acute respiratory distress (ARDS) includes all of the following **except**:
   a) The $Pao_2/Fio_2$ ratio less than 200
   b) Absence of left heart failure
   c) The specific radiographic findings are present.
   d) Acute onset of clinical manifestations
   e) Normal left atrial pressure and pulmonary artery wedge pressure

537. Infants should regain or exceed birthweight by:
   a) 1 week of age
   b) 2 weeks of age
   c) 10 days of age
   d) 17 days of age
   e) 3 weeks of age

538. How much weight should infants gain per day during the first 3 months of their lives?
   a) 15 g/day
   b) 20 g/day
   c) 25 g/day
   d) 30 g/day
   e) 10 g/day

539. Most infants wake up 2 to 3 times at night to feed at:
   a) 1 month of age
   b) 2 months of age

c) 3 months of age
d) 4 months of age
e) 12 months of age

540. Infants have a crying peak at:
a) 1 week of age
b) 2 weeks of age
c) 4 weeks of age
d) 6 weeks of age
e) 12 weeks of age

541. The recommended daily allowance (kcal/kg/day) for infants between **0-3 months** of age is:
a) 85
b) 90
c) 100
d) 110
e) 115

542. The recommended daily allowance (kcal/kg/day) for infants between **3-6 months** of age is:
a) 80
b) 90
c) 100
d) 110
e) 120

543. The recommended daily allowance (kcal/kg/day) for infants between **6 months-3 years of age** is:
a) 85
b) 95
c) 100
d) 110
e) 120

544. The recommended daily allowance (kcal/kg/day) for children between **3-6 years of age** is:
a) 70-80
b) 80-90
c) 90-100
d) 100-110
e) 110-120

545. How much weight should infants between 3-6 months gain per day?
a) 8 g/day
b) 12 g/day
c) 15 g/day
d) 20 g/day
e) 30 g/day

546. How much weight should infants between 6-9 months gain per day?
a) 8 g/day
b) 12 g/day
c) 15 g/day
d) 20 g/day
e) 30 g/day

547. How much weight should infants between 9-12 months gain per day?
a) 6 g/day
b) 8 g/day
c) 12 g/day
d) 15 g/day
e) 20 g/day

548. How much weight should children between 1-3 years gain per day?
   - a) 6 g/day
   - b) 8 g/day
   - c) 12 g/day
   - d) 15 g/day
   - e) 20 g/day

549. How much weight should children between 3-6 years gain per day?
   - a) 6 g/day
   - b) 8 g/day
   - c) 12 g/day
   - d) 15 g/day
   - e) 20 g/day

550. All of the following conditions cause developmental disabilities. The most common cause is:
   - a) Cerebral palsy
   - b) Mental retardation
   - c) Learning disabilities
   - d) Behavioral disorders
   - e) Attention deficit/hyperactivity disorder (ADHD)

551. The mother of a **6-month-old** child wants to know the average number of hours sleep her child should be getting per day:
   - a) 11-12
   - b) 12-13
   - c) 13-14
   - d) 14-15
   - e) 16-20

552. Most children stops taking naps by:
   - a) 3 years of age
   - b) 4 years of age
   - c) 5 years of age
   - d) 6 years of age
   - e) 7 years of age

553. BEARS sleep screening algorithm includes all of the following **except**:
   - a) Bedtime problems
   - b) Excessive daytime sleepiness
   - c) Awakenings during the night
   - d) Regulatory and duration of sleep
   - e) Sleep apnea

554. BEARS sleep sceening provides a comprehensive screen for the major sleep disorders in all of the following age groups **except**:
   - a) 0-1 year
   - b) 2-5 years
   - c) 6-12 years
   - d) 13-15 years
   - e) 16-18 years

555. The following antipsychotic medication should not be used in patients with seizure activities:
   - a) Clozapine
   - b) Ziprasidone
   - c) Olanazapine
   - d) Quetiapine
   - e) Risperidone

556. All of the following are side effect of antipsychotic medications **except**:
   - a) Weight loss
   - b) Sedation

c) Orthostatic hypotension
d) Tardive dyskinesia
e) Neuroleptic malignant syndrome

557. The following antipsychotic medication increases prolactin levels:
a) Risperidone
b) Thiothixine
c) Clozapine
d) Haloperidol
e) Chlorpromazine

558. All of the following are side effects of stimulants **except**:
a) Elevated systolic blood pressure
b) Worsening and development of tics
c) Lower seizure threshold
d) Increased appetite and weight gain
e) Abdominal pain

559. All of the following conditions can cause failure to thrive between **0 to 3 months** of age **except**:
a) Inborn errors of metabolism
b) HIV infection
c) Psychosocial failure to thrive
d) Gastroesophageal reflux
e) Cystic fibrosis

560. All of the following conditions can cause failure to thrive **between 3-6 months** of age **except**:
a) Milk protein allergy
b) HIV infections
c) Renal tubular acidosis
d) Delayed introduction of solid foods
e) Gastroesophageal reflux

561. All of the following conditions can cause failure to thrive (FTT) between **6-12 months** of age **except**:
a) Psychosocial FTT
b) Gastroesophageal reflux
c) Intestinal parasites
d) Renal tubular acidosis
e) Inborn errors of metabolism

562. The most common clinical presentation of mental retardation in patients **between 6-18 months of age** is:
a) Motor delays
b) Feeding difficulties
c) Fine motor delays
d) Language delays
e) Hearing difficulties

563. The most common clinical presentation of mental retardation in patients **between 18 months-3 years of age** is:
a) Language delays
b) Fine motor delays
c) Dysmorphic features
d) Vision impairments
e) Failure to interact with the environment

564. All of the following findings can be present in a patients with mental retardation between **3-5 years of age except**:
a) Language delays
b) Difficulties in coloring
c) Difficulties in cutting
d) Difficulties in playing
e) Academic underachievement

565. The most common clinical presentation of mental retardation in a **newborn** is:
   a) Dysmorphisms
   b) Gross motor delays
   c) Fine motor delays
   d) Hearing impairments
   e) Failure to interact with environment

566. The most common clinical presentation of mental retardation in patients **between 2-4 months of age** is:
   a) Gross motor delays
   b) Fine motor delays
   c) Dysmorphisms
   d) Feeding difficulties
   e) Failure to interact with the environment

567. The most common clinical presentation of mental retardation in patients **over 5 years of age** is:
   a) Gross motor delays
   b) Feeding difficulties
   c) Fine motor delays
   d) Dysmorphisms
   e) Academic underachievement

568. The preferred diagnostic study for children with mental retardation is:
   a) MRI
   b) Chromosomal blood testing
   c) Metabolic
   d) DNA testing
   e) EEG

569. The effect of vitamin E deficiency in preterm infants is:
   a) Hemorrhagic manifestations
   b) Osteomalacia
   c) Poor wound healing
   d) Dermatitis
   e) RBCs hemolysis

570. A child's serum SMA6 reveals Na 150, K 3.7, cl 118, BUN 30, creatinine 1.0, and glucose 108. What is the effective osmolality?
   a) 270
   b) 300
   c) 306
   d) 318
   e) 340

571. All of the following are diagnostic criteria for patients with a syndrome of inappropriate ADH secretion **except**:
   a) Serum osmolality is less than 280
   b) Urine osmolality is more than that of plasma
   c) Serum sodium is more than 135
   d) Urine sodium is more than 25
   e) Absence of renal, adrenal, or thyroid insufficiency

572. All of the following conditions in patients can cause spurious hyperkalemia **except**:
   a) Sickle cell disease
   b) Tissue ischemia during blood drawing
   c) Thrombocytosis
   d) Leukocytosis
   e) Hemolysis

573. The following condition in patients can cause spurious hypokalemia:
   a) Metabolic alkalosis
   b) Insulin

c) Diarrhea
d) Sweating
e) Leukocytosis (high white blood cell counts)

574. The early hypocalcemia in neonates most commonly occurs in:
a) FT, LGA infants
b) FT, AGA infants
c) PT, AGA infants
d) Low birth weight and IUGR infants
e) Postmature, AGA infants

575. The late hypocalcemia in neonates is most commonly due to:
a) Intake of milk with a high content of phosphate
b) Intake of milk with a low content of calcium
c) Intake of milk with a low content of both calcium and phosphate
d) Intake of milk with a low content of phosphate
e) Subcutaneous fat necrosis

576. The most common cause of late neonatal hypocalcemia in a healthy full-term neonate is due to:
a) Intake of high phosphate containing food
b) Intake of low phosphate containing food
c) Intake of low calcium containing food
d) Intake of high calcium containing food
e) Intake of low magnesium containing food

577. All of the following conditions cause hypercalcemia **except**:
a) Subcutaneous fat necrosis in full-term infants
b) Primary hyperparathyroidism
c) Hypervitaminosis A
d) Williams syndrome
e) DiGeorge syndrome

578. A large amount of magnesium is present in which part of the body:
a) Bones
b) Liver
c) Intestine
d) Cartilages
e) Muscles

579. All of the following conditions cause hypomagnesemia **except**:
a) Diarrhea
b) Milk alkali syndrome
c) Gitelman syndrome
d) Bartter syndrome
e) Celiac disease

580. All of the following conditions cause hypermagnesemia **except**:
a) Cystic fibrosis
b) Diabetic ketoacidosis
c) Tumor lysis syndrome
d) Lithium ingestion
e) Excessive use of antacids

581. The mode of inheritance of tumoral calcinosis is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

582. The normal ABG (arterial blood gas) in a full-term infant is:
   a) pH 7.30-7.35, $Pco_2$ 40-50, $Po_2$ 90, $HCO_3^-$ 16-20
   b) pH 7.35-7.45, $Pco_2$ 25-30, $Po_2$ 80, $HCO_3^-$ 20-24
   c) pH 7.35-7.45, $Pco_2$ 35-45, $Po_2$ 100, $HCO_3^-$ 20-28
   d) pH 7.25-7.30, $Pco_2$ 50-60, $Po_2$ 95, $HCO_3^-$ 28-34
   e) pH 7.35-7.40, $Pco_2$ 35-45, $Po_2$ 60, $HCO_3^-$ 16-20

583. The most common cause of lactic acidosis in newborns is:
   a) Sepsis
   b) Viral meningitis
   c) Bacterial meningitis
   d) Renal tubular acidosis
   e) Hypoxia

584. All of the following conditions cause metabolic acidosis with a normal anion gap **except**:
   a) Lactic acidosis
   b) Diarrhea
   c) Renal tubular acidosis
   d) Posthypocapnia
   e) Urinary tract diversions

585. All of the following conditions cause metabolic acidosis with an increased anion gap **except**:
   a) Ammonium chloride intake
   b) Renal failure
   c) Salicylate poisoning
   d) Diabetic ketoacidosis
   e) Inborn errors of metabolism

586. The following statement is **not** true about Gordon syndrome:
   a) Autosomal dominant
   b) Hypertension
   c) Volume expansion
   d) Hyperkalemia
   e) Renal tubular acidosis

587. A normal anion gap is:
   a) 4-6
   b) 6-8
   c) 8-16
   d) 16-20
   e) 20-24

588. The most common cause of metabolic alkalosis in children is:
   a) Emesis
   b) Diarrhea
   c) Cystic fibrosis
   d) Post hypercapnia
   e) Gitelman syndrome

589. A child develops metabolic alkalosis due to persistent vomiting. The appropriate respiratory compensation is hypoventilation that increase the $PCO_2$. For each 10mEq/L increase in the serum bicarbonate concentration, the $PCO_2$ increases by:
   a) 5 mm Hg
   b) 6 mm Hg
   c) 7 mm Hg
   d) 8 mm Hg
   e) 10 mm Hg

590. All of the following conditions cause metabolic alkalosis with hypertension **except**:
   a) Gitelman syndrome

- b) Renin-secreting tumor
- c) Liddle syndrome
- d) 11 beta-hydroxylase deficiency
- e) Cushing syndrome

591. The normal composition of maintenance water in the body is:
- a) Urine 50%, insensible losses 40%, stool 10%
- b) Urine 70%, insensible losses 25%, stool 5%
- c) Urine 60%, insensible losses 30%, stool 10%
- d) Urine 65%, insensible losses 30%, stool 5%
- e) Urine 60%, insensible losses 35%, stool 5%

592. The preferred oral electrolyte solution (ORS) to treat infantile diarrhea is:
- a) Sodium concentration more than 80 mEq/L
- b) Sodium concentration more than 75 mEq/L
- c) Sodium concentration more than 50 mEq/L
- d) Sodium concentration less than 50 mEq/L
- e) Sodium concentration less than 45 mEq/L

593. All of the following statements are true about ORS (oral rehydration solution) **except**:
- a) A patient with mild dehydration should receive 50 mL/kg ORS within 4 hours.
- b) A patient with moderate dehydration should receive 100 mL/kg ORS within 4 hours.
- c) Stools volume should be measured and replaced with ORS solution.
- d) Breast feeding or formula feeding should be allowed after rehydration in infants.
- e) ORS should be given in small amounts at short intervals (e.g., one teaspoon every 1-2 minutes).

594. The most common cause of occult bacteremia that is not associated with a focal soft tissue infection is:
- a) S. pneumoniae
- b) H. influenzae type b
- c) S. aureus
- d) S. epidermidis
- e) N. meningitidis

595. The 900-gram preterm infant is on a mechanical ventilator. Initially, the infant tolerated half-strength premature special care (24 calories) formula at 10 mL/kg/day every 3 hours. The recommended increment volume of feeding per day should be:
- a) 1-4 mL/kg/day
- b) 5-8 mL/kg/day
- c) 10-15 mL/kg/day
- d) 16-20 mL/kg/day
- e) 21-25 mL/kg/day

596. The 1600-gram preterm infant initially tolerated a volume of 20-25 mL/kg/day of full-strength preterm special care (24 calories) formula or breast milk every 3 hours. Thereafter, the recommended increment of feedings per day should **not** exceed:
- a) 5 mL/kg/day
- b) 10 mL/kg/day
- c) 15 mL/kg/day
- d) 20 mL/kg/day
- e) 25 mL/kg/day

597. The large for gestational age (LGA) infants have a higher incidence of all of the following **except**:
- a) Subdural hematomas
- b) Phrenic nerve paralysis
- c) Brachial plexus injuries
- d) Cephalhematomas
- e) Higher intellectual developments

598. The following statement is **not** true about placental insufficiency syndrome:
- a) About 35% infants with placental insufficiency are post-term.
- b) This syndrome is due to degenerative changes in the placenta.

- c) Meconium stained amniotic fluid may be present.
- d) Abnormal fetal heart rate may be noted.
- e) This syndrome is frequently confused with postmaturity.

599. A newborn appears with jaundice within the first 24 hours. The most likely cause is:
    - a) Polycythemia
    - b) Cephalhematoma
    - c) Bruises over the face
    - d) Biliary atresia
    - e) Hemolysis

600. A newborn appears pale during the first physical examination. The pale appearance is **not** due to the following:
    - a) Anemia
    - b) Bleeding
    - c) Hypoxia
    - d) Adrenal failure
    - e) Hyperglycemia

601. The predominant source of erythropoietin (EPO) during fetal life is:
    - a) Spleen
    - b) Liver
    - c) Bone marrow
    - d) Kidneys
    - e) Adrenals

602. The predominant source of erythropoietin (EPO) by 40 weeks gestational age is:
    - a) Kidneys
    - b) Liver
    - c) Bone marrow
    - d) Adrenals
    - e) Spleen

603. A premature infant with bronchopulmonary dysplasia (BPD) was treated with corticosteroids. The premature infant may develop:
    - a) Adrenal hypertrophy
    - b) Hypopituitarism
    - c) Hypoglycemia
    - d) Herperpituitarism
    - e) Transient hypertrophic cardiomyopathy

604. The most common clinical manifestation of myocarditis is:
    - a) Cardiac failure
    - b) Bradycardia
    - c) Heart block
    - d) Hypertension
    - e) Bounding peripheral pulses

605. The most common cause of myocarditis is:
    - a) Diptheria
    - b) Viral infection
    - c) Toxoplasmosis
    - d) Histoplasmosis
    - e) Bacterial infections

606. The most common primary malignant cardiac tumors in children is:
    - a) Sarcomas
    - b) Leukemia
    - c) Lymphomas
    - d) Wilms tumor
    - e) Mesotheliomas

607. Furosemide therapy can cause all of the following complications **except**:
  a) Hyponatremia
  b) Hypokalemia
  c) Acidosis
  d) Hypochloremia
  e) Increased extracellular fluid volume (ECF)

608. The most common cause of death in pediatric patients with heart transplantation is:
  a) Rejection
  b) Malignancy
  c) Pulmonary hypertension
  d) Cytomegalovirus infection
  e) Graft coronary artery disease

609. The most common tumor that occurs in patients after cardiac transplantation is:
  a) Sarcomas
  b) Leukemia
  c) Mesotheliomas
  d) Skin cancers
  e) Lymphoproliferative disease

610. The most common cause of hypertension in newborn is:
  a) Umbilical venous catheterization
  b) Umbilical artery catheterization
  c) Acute glomerulonephritis
  d) Acute tubular necrosis
  e) Excessive administration of intravenous fluids

611. All of the following laboratory findings are compatible in patients with anemia of chronic disease (ACD) **except**:
  a) Absolute reticulocyte counts are elevated
  b) Low serum iron levels
  c) Low serum transferrin levels
  d) Normocytic and normochromic anemia
  e) Normal bone marrow cellularity

612. An infant has been drinking powered milk for the last 12 months. The infant developed anemia. The most likely diagnosis is:
  a) Iron deficiency
  b) Cyanocobalamine deficiency
  c) Lead poisoning
  d) Sideroblastic anemia
  e) Folic acid deficiency

613. A patient is receiving iron therapy for anemia. The responses to iron therapy within the first 12-24 hours after iron ingestion include all of the following **except**:
  a) Erythroid hyperplasia
  b) Increased appetite
  c) Decreased irritability
  d) Subjective improvement
  e) Replacement of intracellular iron enzymes

614. The following sequence of events occur in patients who received iron therapy for iron-deficiency anemia for the first 3 months of therapy:
  a) Replacement of intracellular iron enzymes, increased appetite, erythroid hyperplasia, increased hemoglobin levels, reticulocytosis, and repletion of stores.
  b) Increased hemoglobin levels, reticulocytosis, replacement of intracellular iron enzymes, increased appetite, erythroid hyperplasia, and repletion of stores.
  c) Erythroid hyperplasia, repletion of stores, increased appetite, increased hemoglobin levels, reticulocytosis, and replacement of intracellular iron enzymes.

d) Increased appetite, repletion of stores, erythroid hyperplasia, replacement of intracellular iron enzymes, increased hemoglobin levels, and reticulocytosis
e) Replacement of intracellular iron enzymes, increased appetite, erythroid hyperplasia, reticulocytosis, increased hemoglobin levels and repletion of stores.

615. In a normal child, the percentile of RBCs are removed each day and replaced by the marrow to maintain the normal RBC count is:
a) 0.1%
b) 0.2%
c) 0.5%
d) 1%
e) 2%

616. An infant developed anemia. The laboratory studies reveals that the hemoglobin level is 10.5 g/dL, hematocrit is 31.5%, and reticulocyte count is 9.5%. The blood smear reveals spherocytes. The infant's blood type A+, Coombs negative. The infant is feeding well with a strong suck. The appropriate management is:
a) Iron therapy
b) Folic acid therapy
c) P-RBCs transfusion
d) Vitamin $B_{12}$ therapy
e) Observation

617. A 7-year-old boy appears with anemia. The laboratory studies reveal that the hemoglobin level is 8 g/dL, hematocrit is 24%, and reticulocyte count is 14%. The blood smear reveals many spherocytes. The child's blood type is B+. The physical examination reveals a massive enlargement of spleen. The appropriate management is:
a) Iron therapy
b) Vitamin B6
c) Vitamin B12 therapy
d) Splenectomy
e) Observation

618. The following deficiency can cause poor growth and delayed maturation in patients with sickle cell disease:
a) Vitamin C deficiency
b) Vitamin A deficiency
c) Vitamin D deficiency
d) Calcium deficiency
e) Zinc deficiency

619. A 14-year-old boy with sickle cell disease appears with right upper quadrant abdominal pain for the last 12 hours. The pain subsided with acetaminophen and codeine. The appropriate investigation is:
a) Abdominal x-rays
b) Upper GI series
c) Barium enemas
d) Kidney-ureter bladder x-rays
e) Ultrasonography of the gallbladder and bile duct

620. A 17-year-old boy with sickle cell disease appears with sudden onset of fever, malaise, and lethargy. He had history of splenectomy at 7 years of age. He is up to date for immunization. The physical examination reveals temperature 101°F, tachypnea, and pallor. The chest x-ray appears normal. CBC reveals that the hemoglobin level is 5 g/dL, hematocrit level is 15%, and reticulocyte count is 0.1%. The blood culture is negative. The most likely diagnostic study is:
a) Bone scan
b) Ultrasonography of the abdomen
c) Spinal tap
d) Lung scan
e) Anti-B 19 IgM

621. A 2-year-old child appears with priaprism. The most likely diagnosis is:
a) Sickle cell trait
b) Polycythemia
c) Thalassemia

d) Trauma to the genitalia
e) Sickle cell disease

622. The first indication of sickle nephropathy is:
a) Hematuria
b) Proteinuria
c) Cystitis
d) Pyelonephritis
e) Urinary tract infection (UTI)

623. The most common clinical manifestation in infants with sickle cell disease:
a) Aplastic anemia
b) Salmonella osteomyelitis
c) Pneumonia
d) UTI
e) Dactylitis

624. A 5-year-old boy recently immigrated from an African country. He appears with a sudden onset of weakness in the left side of the body with a difficulty in speech. His mother denies history of trauma. The physical examination reveals left hemiplegia and enlarged spleen. The following investigation is indicated to make the diagnosis:
a) Head CT scan
b) Head MRI
c) Urine toxicology
d) Hemoglobin electrophoresis
e) Continuous monitoring of BP

625. The following investigation is indicated in patients with sickle cell disease who are at risk for a stroke:
a) Routine hemoglobin electrophoresis
b) Head CT scan
c) Head MRI
d) Cerebral angiogram
e) Transcranial doppler

626. A transcranial doppler (TCD) study in a sickle cell disease (Hbss) patient reveals the blood flow velocity in cerebral arteries is 240 cm/second. The next step in the management is:
a) Intravenous hydration
b) Ceftriaxone
c) Restrict oral fluids
d) Acetaminophen with codeine
e) Blood transfusions

627. The outpatient therapy is contraindicated in all of the following febrile sickle cell patients **except**:
a) Previous history of sepsis
b) High fever
c) History of splenectomy
d) A clinically stable child older than 18 months of age and the physician knows the patient and family very well. A follow up clinic appointment is made for the next day. A dose of ceftriaxone is given after all the appropriate investigations.
e) A 6-year-old boy with a mild abdominal pain

628. The curative therapy for patients with alpha-thalassemia with hydrops is:
a) P-RBCs transfusion
b) Whole blood transfusion
c) Exchange transfusion
d) Hydroxyurea
e) Bone marrow transplantation

629. A newborn infant appears with hydrops secondary to alpha-thalassemia. The fetus survived and placed on a mechanical ventilator. The next step in the management is:
a) P-RBCs transfusion

b) Dopamine
c) Fluid restriction
d) Intravenous hydration
e) Exchange transfusion

630. The following condition is **not** an indication to give P-RBCs transfusion in **infants less than 4 months of age**:
a) Hemoglobin 10.5 g/dL and major surgery
b) Hemoglobin 7.5 g/dL and symptomatic infant
c) Hemoglobin 12 g/dL and severe cardiac disease
d) Hemoglobin 9 g/dL and moderate lung disease
e) Hemoglobin 12 g/dL and severe lung disease

631. All of the following are indications of P-RBCs transfusion in **children and adolescents except**:
a) Hemoglobin 7.5 g/dL and marrow failure
b) Hemoglobin 7.5 g/dL and symptomatic chronic anemia
c) Hemoglobin 12.0 g/dL and severe cardiopulmonary disease
d) Hemoglobin 7.0 g/dL in perioperative period
e) Acute blood loss (20% of circulating blood volume)

632. The use of factor VIII concentrate is indicated immediately in all of the following hemorrhages in patients with hemophilia A **except**:
a) Hematuria
b) Hemarthrosis
c) Major surgery
d) Muscle hematoma
e) Tooth extraction

633. The following management is **not** indicated immediately in patients with hemophilia and epistaxis:
a) ENT consult
b) Apply pressure for 15-20 minutes
c) Antifibrionolytic therapy
d) Pack with petrolatum gauge
e) F VIII concentrate

634. An 11-year-old girl appears with menorrhagia. The American College of Obstetrics and Gynecology recommends the following investigation before the initiation of hormonal therapy or oral contraceptives:
a) Ultrasonography of uterus
b) Estrogen levels
c) Progesterone levels
d) Prolactin levels
e) Rule out von Willebrand disease

635. All of the following types of von Willebrand disease have a prolonged bleeding time and PTT **except**:
a) Type 1
b) Type 2A
c) Type 2B
d) Type 2N
e) Type 3

636. The platelet counts are normal in all of the following types of von Willebrand disease **except**:
a) Type 1
b) Type 2A
c) Type 2B
d) Type 2M
e) Type 3

637. The most common type of von Willebrand disease:
a) Type 1
b) Type 2A

- c) Type 2B
- d) Type 2N
- e) Type 3

638. The specific antidote used in patients with rate poisoning is:
   - a) Vitamin A
   - b) Vitamin D
   - c) Vitamin K
   - d) Heparin
   - e) Vitamin E

639. The current newborn screening test for 21-hydroxylase deficiency in congenital adrenal hyperplasia has the following problem:
   - a) High false-positive results
   - b) Low false-positive results
   - c) High false-negative results
   - d) Low false-negative results
   - e) This problem is worst in full-term than preterm infants

640. The time to perform surgery in patients with ambiguous genitalia is:
   - a) 0-1 month
   - b) 1-3 months
   - c) 4-12 months
   - d) 12-18 months
   - e) 18-24 months

641. The preferred diagnostic study in patients with 21-hydroxylase deficiency in congenital adrenal hyperplasia is:
   - a) 17-hydroxyprogesterone level during the first 24 hours of life
   - b) 17-hydroxyprogesterone level between 48-72 hours of life.
   - c) Ultrasonography of the adrenal glands
   - d) MRI of the adrenal glands
   - e) 17-hydroxyprogesterone levels before and 30 or 60 minutes after an intravenous bolus of cosyntropin (ACTH 1-24)

642. An infant is diagnosed with congenital adrenal hyperplasia. He has a high BP. The most likely enzyme deficiency is:
   - a) 21-hydroxylase deficiency
   - b) 11 beta-hydroxylase deficiency
   - c) 3 beta-hydroxysteroid dehydrogenase deficiency
   - d) 17 alpha-OH/17, 20-lyase deficiency
   - e) 17-hydroxylase deficiency

643. The hypertension noted in patients with 11 beta-hydroxylase deficiency of CAH is most likely due to:
   - a) Elevated levels of testosterone
   - b) Elevated levels of ACTH
   - c) Elevated levels of dehydrotestosterone
   - d) Decreased levels of progesterone
   - e) Elevated levels of deoxycorticosterone

644. The most common cause of Cushing syndrome is:
   - a) Adrenal adenomas
   - b) Adrenal carcinomas
   - c) Exogenous administration of glucocorticoid hormones
   - d) Carney complex
   - e) Ectopic secretion of corticotropin

645. The most common **endogenous** cause of Cushing syndrome is:
   - a) Functioning benign adrenocortical tumor
   - b) Functioning malignant adrenocortical tumor
   - c) Pigmented nodular adrenocortical disease (Carney complex)
   - d) McCune Albright syndrome
   - e) Ectopic production of ACTH

646. The most common cause of endogenous Cushing syndrome in children older than 7 years of age is:
   a) Carney complex
   b) Ectopic production of ACTH
   c) Adrenal benign tumor
   d) Adrenal malignant tumor
   e) Cushing disease

647. Primary pigmented nodular adrenocortical disease (PPNAD) or Carney complex includes all of the following **except**:
   a) Autosomal recessive
   b) Cardiac myxoma
   c) Pigmented melanotic schwannomas
   d) Centrofacial lentigines and blue nevi
   e) Pituitary tumor

648. A patient's abdominal CT examination reveals a 3 cm mass in the left adrenal gland as an incidental finding. The next step in management is:
   a) Surgical removal of the mass
   b) Surgical removal of the gland and mass
   c) Radiotherapy of the mass
   d) Chemotherapy
   e) Clinical follow up and periodic reimaging

649. All of the following conditions cause adrenal calcifications **except**:
   a) Wolman disease
   b) Neuroblastoma
   c) Ganglioneuromas
   d) Congenital adrenal hyperplasia
   e) Waterhouse-Friderischsen syndrome

650. The most common cause of adrenal calcifications is:
   a) Hemorrhage into adrenal gland
   b) Tuberculosis
   c) Adrenal cysts
   d) Pheochromocytomas
   e) Adrenal carcinomas

651. The following statement is **not** true about Noonan syndrome:
   a) This syndrome occurs in males only.
   b) Human growth hormone therapy improves the growth velocity.
   c) Pulmonic valvular stenosis is the most common cardiac defect.
   d) Hepatosplenomegaly can be present.
   e) Factor XI and XII deficiencies can occur.

652. A routine physical examination of an adolescent reveals a testicular volume of 40 mL. The preferred diagnostic study is:
   a) Testicular scan
   b) Ultrasonography of testes
   c) CT scan of testes
   d) MRI of the testes
   e) Direct DNA analysis

653. A boy appears with an unilateral cryptorchidism. The size of descended testis is:
   a) Same as normal of age.
   b) 25% larger than normal for age
   c) 25% smaller than normal for age
   d) 50% larger than normal for age
   e) 75% larger than normal for age

654. A 10-year-old boy appears with gynecomastia. His 8-year-old sister has large breasts (macromastia) and isosexual precocious puberty. Their father has gynecomastia. The mostly likely diagnosis is:

a) Physiologic gynecomastia
b) Familial gynecomastia
c) Prolactinoma
d) Craniopharyngioma
e) Syndrome of aromatase excess

655. A 10-year-old boy appears with bilateral gynecomastia for the last 3 weeks. He is being treated with human growth hormone for his short stature. The next step in management is:
a) Endoscopic surgery
b) Bilateral mastectomy
c) Danazol
d) Testolactone
e) Reassurance

656. A 14-year-old boy appears with bilateral gynecomastia for the last 1 month. His mother has been using a topical hormonal cream. The physical examination reveals increased pigmentation of both nipples and areolae. The next in management is:
a) Surgical consultation
b) Danazol
c) Anastrozole
d) Avoid exposure of exogenous estrogens
e) Reassurance

657. Estrogen induced gynecomastia is due to all of the following conditions **except**:
a) Decreased levels of androgens
b) Decreased levels of estrogens
c) Increased levels of estradiol
d) Decreased levels of free androgens
e) Displaced andogrens from breast androgen receptors

658. A child appears with history of vomiting, diarrhea, and abdominal pain. He also complains of hot and cold sensations of the extremities, itching, and myalgias. His family went to the seafood restaurant for dinner and the symptoms started within 2 hours after dinner. The physical examination reveals rash on the palms and soles, tachycardia, and low BP. The most likely diagnosis is:
a) Scombroid fish poisoning
b) Paralytic shellfish poisoning
c) Amnesic shellfish poisoning
d) Diarrhetic shellfish poisoning
e) Ciguatera fish poisoning

659. The most potent neurotoxin responsible for paralytic shellfish poisoning is:
a) Saxitoxin
b) Maitotoxin
c) Ciguatoxin
d) Domoic acid
e) Scombrotoxin

660. A 16-year-old boy appears with abdominal pain, nausea, paraesthesias around the mouth and stocking-glove areas. He also complains of hot-cold temperature sensations. He ate mussels, scallops, and clams 30 minutes prior to the symptoms. The next step in management is:
a) Supportive care
b) Intravenous calcium
c) Mannitol
d) Gabapentin
e) Cimetidine

661. A group of adolescents appear with dyspnea and rhinorrhea. They were traveling on the train. Many other adults with the same symptoms also got sick and were brought to the ER at the same time. A few patients developed seizure activities and some of them are paralyzed. The preferred therapy includes all of the following **except**:
a) Atropine
b) Pralidoxime

c) Diazepam
d) Sodium nitrite
e) Oxygen

662. A group of children appear with a difficulty in breathing and seizure activities. A few of them required intubation and mechanical ventilation. One child became comatose. They were traveling on the train with their parents. Most parents with the same symptoms also got sick and were brought to the ER at the same time. The symptomatic children are treated with oxygen. ABG reveals severe metabolic acidosis with increased anion gaps. The treatment includes all of the following **except**:
a) Sodium bicarbonate
b) Sodium nitrite
c) Sodium thiosulfate
d) 100% oxygen
e) BAL

663. A patient with chlorine toxicity appears with the following symptoms:
a) Vesicles
b) Seizures
c) Coma
d) Miosis
e) Irritation of eyes, nose, and throat

664. The clinical feature of phosgene toxicity is:
a) Paralysis
b) Apnea
c) Seizures
d) Erythema
e) Pulmonary edema

665. The clinical features of vesicants (e.g., mustard, lewisite) toxicity includes all of the following **except**:
a) Inflammation of eyes
b) Erythema of skin
c) Vesicles of skin
d) Seizures
e) Inflammation of respiratory tract

666. A routine physical examination in a newborn child reveals a palpable abdominal mass. The most likely diagnosis is:
a) Pancreatic pseudocyst
b) Choledochal cyst
c) Hydronephrotic kidney
d) Hepatoma
e) Mesenteric cyst

667. In boys, ectopic ureters most commonly drain into:
a) Vas deferens
b) Seminal vesicle
c) Prostatic utricle
d) Ejaculatory duct
e) Posterior urethra

668. In girls, ectopic ureters most commonly drain into;
a) Vagina
b) Cervix
c) Uterus
d) Gartner duct
e) Urethra

669. In boys, the most common clinical presentation of ectopic ureters is:
a) UTI
b) Urinary incontinence

c) Ureteral prolapse
d) Abdominal mass
e) Pelvis mass

670. In girls, the most common clinical presentation of ectopic ureter is:
a) Pelvic mass
b) Abdominal mass
c) Urethral prolapse
d) Urinary incontinence
e) UTI

671. The most common associated anomaly in prune-belly syndrome is:
a) Malrotation of intestine
b) CNS
c) Cardiac (VSD)
d) Musculoskeletal
e) Pulmonary cysts

672. Prune-belly syndrome includes all of the following findings **except**:
a) Deficient abdominal muscles
b) Undescended testes
c) Polyhydramnios
d) Pulmonary hypoplasia
e) Urinary tract abnormalities

673. A full-term male newborn is admitted in NICU with the diagnosis of posterior urethral valve. The physical examination reveals the distended urinary bladder. A small polyethylene feeding tube (No. 8 French) is inserted through the urethra. Urine drains around the catheter rather than through the catheter. The most likely interpretation of the urinary drainage is:
a) The newborn don't have posterior urethral valve.
b) The newborn has urethral stricture
c) The newborn has phimosis
d) The tip of the catheter is coiled in the posterior urethra.
e) The tip of the catheter perforated the urethra.

The next step in management is:
a) Remove the catheter because of the wrong diagnosis
b) Dilatation of the urethral stricture
c) Circumcision
d) Remove the catheter and reinsert a new (No. 5 French) catheter
e) Remove the catheter and insert a Foley (balloon) catheter

674. The preferred diagnostic study in patients with a posterior urethral valve is:
a) VCUG
b) MRI of the bladder
c) CT scan of the bladder
d) Nuclear scan of the bladder
e) Intravenous pyelography

675. A 1-day-old infant is diagnosed with posterior urethral valve. His BUN and serum creatinine values are 30 and 3.6 respectively. His BUN and serum creatinine values become normal 2 days after the insertion of an urinary catheter through urethra. The next step in management is:
a) Vesicostomy
b) Peritoneal dialysis
c) Hemodialysis
d) Remove the catheter
e) Endoscopic transurethral ablation of the posterior urethral valve leaflets.

676. A 1-day-old infant is diagnosed with posterior urethral valve. His BUN and creatinine values are 35 and 4.0 respectively. His serum creatinine value is increased up to 5.0 despite the insertion of an urinary catheter. The next step in management is:

a) Vesicostomy
b) Pyelostomy
c) Hemodialysis
d) Insert a bigger catheter
e) Continuous ambulatory peritoneal dialysis

677. The numbers of coordinated, reflex voiding per day in infants are the following:
a) 5 to 10
b) 10 to 15
c) 15 to 20
d) 20 to 25
e) 25 to 30

678. The urinary bladder capacity of a 4-year-old child is:
a) 2 ounces
b) 4 ounces
c) 6 ounces
d) 8 ounces
e) 10 ounces

679. A 4½ year-old-boy is incontinent at night. His mother is worried. The next step in management is:
a) Rule out UTI
b) VCUG
c) Bladder ultrasonography
d) Put urinary catheter every night
e) Reassurance

680. The risk of enuresis in a child whose one parent was enuretic is:
a) 25%
b) 44%
c) 50%
d) 66%
e) 77%

681. The risk of enuresis in a child whose both parents were enuretic is:
a) 25%
b) 50%
c) 66%
d) 77%
e) 100%

682. All of the following factors are associated with the pathogenesis of primary nocturnal enuresis **except**:
a) UTI
b) Enlarged tonsils
c) Chromosomes 12
d) Reduced ADH secretion at night
e) Delayed maturation of the cortical mechanisms

683. The history and physical examination of a child with primary nocturnal enuresis include all of the following **except**:
a) Pattern of enuresis
b) Fluid intake at night
c) History of snoring at night
d) Palpation of the abdomen
e) Rectal examination before voiding

684. A 7-year-old boy appears with primary noctural enuresis. The boy is continent during the day. The physical examination is unremarkable. Urinalysis is normal. Urine culture is negative. The next step in management is:
a) VCUG
b) Renal scan

c) Spinal x-ray
d) Monitor for sleep apnea
e) No further investigation

685. A child appears with primary nocturnal enuresis. The physical examination reveals hypertrophied adenoids. The next step in management is:
a) Desmopressin acetate tablets
b) Desmopressin acetate nasal sprays
c) Imipramine
d) Adenoidectomy
e) Oxybutynin chloride

686. The nonpharmacologic therapies in patients with primary nocturnal enuresis include all of the following **except**:
a) Restriction of fluids after 7 PM
b) Motivational approach
c) Conditioning therapy
d) Reassure parents that the condition is self-limited
e) Holding urine for a longer period in day time

687. The preferred pharmacologic therapy for patients with primary nocturnal enuresis is:
a) Desmopressin acetate tablets at bedtime
b) Desmopressin acetate nasal sprays at bedtime
c) Imipramine
d) Oxybutynin chloride
e) Desipramine

688. The most common cause of poisoning by prescription medication in younger siblings is:
a) Acetaminophen
b) Ibuprofen
c) Zithromax
d) Amoxicillin
e) Imipramine

689. The most common intramedullary tumor of the spinal cord in children is:
a) Ependymoma
b) Sarcoma
c) Lymphoma
d) Astrocytoma
e) Neurofibroma

690. The most common clinical feature in patients with Waardenburg syndrome is:
a) Dystopia canthorum
b) Broad nasal root
c) Heterochromic irises
d) Congenital deafness
e) White forelock

691. The following investigation is recommended in a child with Waardenburg syndrome:
a) Renal scan
b) Echocardiogram
c) Head CT scan
d) Retinal examination
e) Hearing test

692. The mode of inheritance in patients with Waardenburg syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive

d) X-linked dominant
e) Multifactorial

693. The most common associated anomaly in patients with hypomelanosis of Ito (incontinencia pigmenti acromians) is:
a) Scoliosis
b) Strabismus
c) Seizures
d) Microcephaly
e) Mental retardation

694. The Vogt-Koyanagi syndrome includes all of the following findings **except**:
a) Vitiligo
b) Uveitis
c) Kidney disorder
d) CNS disorder
e) Premature graying of hair

695. A child appears with rosette-like blisters around a central rust over the trunk of the body. The most likely diagnosis is:
a) Dermatitis herpetiformis
b) IgA dermatosis
c) Chickenpox
d) Pemphigus vulgaris
e) Epidermolysis bullosa

696. A child is being treated with oral sulfapyridine for skin lesions. This medication can cause the following problem:
a) Cardiac
b) Renal
c) CNS
d) Thyroid
e) Pulmonary

697. Dermatitis herpetiformis is strongly associated with the following condition:
a) Varicella infection
b) Echovirus infection
c) Insect bites
d) Eczema
e) Gluten-sensitive enteropathy

698. The preferred therapy for patients with dermatitis herpetiformis is:
a) Acyclovir
b) Corticosteroids
c) Erythromycin
d) Sulfapyridine
e) Zinc oxide ointment

699. The most common organism causing athlete’s foot in young children is:
a) Trichophyton rubrum
b) Trichophyton mentagrophytes
c) Microsporum canis
d) Microsporum audouinii
e) Epidermophyton floccosum

700. The preferred therapy for newborn infants with talipes equinovarus (club feet) is:
a) Serial plaster casts
b) Complete soft tissue release
c) Taping
d) Malleable splints
e) Tendon transfers and fusion of joints

701. A 3-month-old infant appears with a right foot cast for talipes equinovarus. The foot x-ray reveals that the total correction is not achieved. The next step in management is:
   - a) Continue cast for another month
   - b) Remove the old cast and put a new one
   - c) Start vigorous physiotherapy
   - d) Refer to a new orthopedic specialist
   - e) Surgical treatment

702. All of the following parameters indicate prerenal acute renal failure (ARF) **except**:
   - a) BUN/creatinine ratio is less than 20.
   - b) Fractional excretion of sodium is less than 1%.
   - c) Urine sodium is less than 20 mEq/L.
   - d) Urine specific gravity is more than 1.020.
   - e) Urine osmolality is more than 500 mOsm.

703. All of the following parameters indicate intrinsic acute renal failure (ARF) **except**:
   - a) BUN/creatinine ratio is less than 20.
   - b) Fractional excretion of sodium is more than 2%.
   - c) Urine sodium is more than 40 mEq/L.
   - d) Urine specific gravity is less than 1.010.
   - e) Urine osmolality is between 350-500 mOsm.

704. The side effects of propranolol include all of the following **except**:
   - a) Bradycardia
   - b) Bronchospasm
   - c) Hyperglycemia
   - d) Hypotension
   - e) Heart block

705. The following therapy is contraindicated in patients with supraventricular tachycardia (SVT):
   - a) Verapamil
   - b) Ice bag over the face
   - c) Phenylephrine
   - d) Edrophonium
   - e) Synchronized DC cardioversion

706. The preferred therapy in a stable patient with SVT is:
   - a) Propranolol
   - b) Quinidine
   - c) Procainamide
   - d) Submersion of the face in iced saline
   - e) Adenosine

707. The preferred therapy in patients with SVT and severe cardiac failure is:
   - a) Adenosine
   - b) Propranolol
   - c) Phenylephrine
   - d) Synchronized DC cardioversion
   - e) Quinidine

708. Jervell-Lange-Nielsen syndrome (JLNS) is usually associated with:
   - a) Cataract
   - b) Deafness
   - c) Hydronephrosis
   - d) Hepatitis
   - e) Choanal atresia

709. The most common malignant liver tumor in children is:
   - a) Neuroblastoma

b) Rhabdomyosarcoma
c) Hepatoblastoma
d) Angiosarcoma
e) Hemangioendothelioma

710. A 2-year-old child appears with anorexia, vomiting, weight loss, and abdominal pain. The physical examination reveals a large mass in the liver and mild abdominal discomfort. The following laboratory finding is almost always present in patients with hepatoblastomas:
a) Elevated liver enzymes and bilirubins
b) Polycythemia
c) Positive hepatitis B
d) Positive hepatitis C
e) Elevated alpha-fetoprotein (AFP)

711. After surgical removal of a portion of the liver, hepatic regeneration is noted within:
a) 3 months of age
b) 6 months of age
c) 9 months of age
d) 12 months of age
e) 15 months of age

712. The trilateral retinoblastoma includes the following finding:
a) Anterior pituitary tumor
b) Posterior pituitary tumor
c) Bone tumor
d) Liver tumor
e) Pineal area tumor

713. An infant is diagnosed and treated for retinoblastoma. The routine ophthalmologic examination should continue to detect a new lesion until:
a) About 4 years of age
b) About 6 years of age
c) About 9 years of age
d) About 12 years of age
e) About 18 years of age

714. A routine physical examination of the newborn reveals absence of right reflex and presence of white pupillary reflex in the left eye. The patient may have the following chromosomal defect:
a) Chromosome 5
b) Chromosome 11
c) Chromosome 13
d) Chromosome 18
e) Chromosome 21

715. The preferred diagnostic study in patients with retinoblastoma is:
a) MRI
b) CT scan
c) Ultrasonography
d) Biopsy
e) Opthalmologic examination under general anesthesia

716. The preferred therapy in patients with retinoblastoma is:
a) Local control of intraocular tumor and chemotherapy
b) Enucleation
c) Chemotherapy
d) Radiotherapy
e) External-beam irradiation

717. A voiding cystourethrogram (VCUG) is indicated in all of the following conditions **except**:
   a) A 10-year-old girl with one episode of afebrile UTI
   b) A 4-year-old girl with one episode of UTI
   c) A 12-year-old boy with one episode of UTI
   d) A 2-year-old girl with one episode of UTI
   e) A 10-day-old girl with afebrile UTI

718. The true statement about the incidence of reflux in VCUG studies performed during treatment of UTI or after 6 weeks is:
   a) The incidence of reflux is 50% higher if VCUG study is performed during treatment of the UTI.
   b) The incidence of reflux is 25% higher if VCUG study is performed during treatment of the UTI.
   c) The incidence of reflux is identical if VCUG study is performed during treatment of the UTI or after 6 weeks.
   d) The incidence of reflux is 25% higher if VCUG study is performed after 6 weeks of treatment.
   e) The incidence of reflux is 50% higher if VCUG study is performed after 6 weeks of treatment.

719. The recommended timing to perform VCUG study in patient with UTI is:
   a) Before the onset of therapy
   b) Two days after the onset of therapy
   c) Before the child is discharged from the hospital
   d) Two months after the therapy
   e) Three months after the therapy

720. The following statement is not true about voiding cystourethrogram (VCUG) studies:
   a) A contrast VCUG study is not recommended for boys for the initial work-up
   b) A radionuclide VCUG study has less radiation effects on gonads than that of contrast VCUG.
   c) A radionuclide VCUG study determines the accurate grading of the reflux.
   d) A radionuclide VCUG study does not give anatomic definition of the urinary bladder.
   e) A radionuclide VCUG study is preferred in girls.

721. The preferred study to determine the renal scar is:
   a) Ultrasonography
   b) Radionuclide VCUG
   c) Contrast VCUG
   d) DMSA scan
   e) Power Doppler Ultrasonography

722. A child is diagnosed with a febrile UTI. Renal ultrasonographic studies are normal. The physician wants to rule-out acute pyelonephritis. The next step in management is:
   a) Perform a power Doppler ultrasonography
   b) Radionuclide VCUG
   c) Contrast VCUG
   d) Plain x-ray of the kidney
   e) DMSA scan

723. The following study is contraindicated in a female child with UTI:
   a) Ultrasonography of the kidney
   b) Radionuclide VCUG
   c) Contrast VCUG
   d) DMSA renal scan
   e) Cystoscopy and measurement of urethral caliber

724. The following statement is not true about DMSA renal scan results:
   a) DMSA renal scan can differentiate acute from chronic pyelonephritis.
   b) DMSA renal scan results are normal in 60% of children with a febrile UTI, irrespective of age.
   c) If the DMSA renal scan is normal during a febrile UTI, no scarring results from that infection.
   d) If the DMSA renal scan reveals acute pyelonephritis, about 50% of patients will develop scars in that area over the next 5 months.
   e) DMSA renal scan results reveal acute pyelonephritis in 80-90% of children with grade III and more reflux and a febrile UTI.

725. The nasopharyngeal carcinoma in children is usually associated with:
   a) Rhinovirus
   b) Respiratory syncitial virus
   c) Adenovirus
   d) Group A Streptococcus
   e) Epstein-Barr virus

726. The most common cause of nonspecific vulvovaginitis in all pediatric age groups:
   a) Foreign body
   b) Poor perineal hygiene
   c) Tight underwear
   d) Constipation
   e) Diarrhea

727. The nonspecific vulvovaginitis is most commonly associated with the following organism:
   a) Salmonella
   b) Shigella
   c) S. aureus
   d) Hemolytic Streptococcus
   e) E. coli

728. The treatment of nonspecific vulvovaginitis includes all of the following **except**:
   a) Appropriate perineal hygiene
   b) Avoid tight-fitting underwears
   c) Avoid sitz baths
   d) Air-drying the vulva
   e) Avoid 'vaginal fixation'

729. The preferred therapy in patients with a recurrent vulvovaginitis is:
   a) Topical estrogen cream
   b) Topical polysporin ointment
   c) Amoxicillin
   d) Erythromycin
   e) Trimethoprim-sulfamethoxazole

730. The most common organism in patients with specific vulvovaginitis is:
   a) Candida
   b) Peptococcus
   c) Protozoa
   d) Virus
   e) Gardenrella vaginalis

731. The most common foreign body in the vagina is:
   a) Peanut
   b) Pencil
   c) Crayon
   d) Toilet paper
   e) Tiny candy

732. Breast development in girls normally begins at:
   a) 7½ years of age
   b) 8½ years of age
   c) 9½ years of age
   d) 10 years of age
   e) 11 years of age

733. The preferred method to detect a breast abnormality in adolescents is:
   a) Lateral x-ray of the breast
   b) CT scan of the breast

c) MRI of the breast
d) Ultrasonography of the breast
e) Self-examination of the breast

734. The preferred position during breast self-examination in girls is:
a) Sit down
b) Lie down supine
c) Lie down prone
d) Lie down laterally
e) Stand up

735. The most common breast mass in adolescent girls is:
a) Breast cyst
b) Fibrocystic disease
c) Mastitis
d) Lipoma
e) Fibroadenoma

736. A 2-year-old girl appears with a few episodes of sudden onset of vomiting, ataxia, and refuses to walk. She has been walking normally for the last 12 months. She talks normally and remains conscious during and after the episodes. During physical examination, the patient experienced another attack. The girl looks pale and frightened. The horizontal nystagus is also noted. The neurological examination is normal. However, an abnormal vestibular function is noted during an ice water caloric testing. The next step in management is:
a) Head CT scan
b) Head MRI
c) Phenobarbital
d) Phenytoin
e) Diphenhydramine

737. A 6-month-old girls appears with sudden onset of irregular breathing, grunting, sweating, and becomes flushed. The episodes lasted for 1-2 minutes. The next step in management is:
a) Chest x-ray
b) EKG
c) Sweat chloride test
d) Serum glucose level
e) Reassurance

738. A 3-year-old boy has a visual acuity of 20/40. The next step in management is:
a) Refer to an opthalmologist
b) Refer to an optometrist
c) Eye examination under general anesthesia
d) Reexamination 1 month
e) Reassurance

739. A 4-year-old girl has a visual acuity of 20/30. the next step in management is:
a) Reexamination after 1 month
b) Reexamination after 3 month
c) Refer to an opthalmologist
d) Refer to an optometrist
e) Reassurance

740. Most children have a visual acuity of 20/20 by:
a) 4-5 years of age
b) 5-6 years of age
c) 6-7 years of age
d) 7-8 years of age
e) 8-9 years of age

741. The major source of lead poisoning in U.S. children is:
   a) Gasoline
   b) Breast milk
   c) Pencil
   d) Paint
   e) Placental transfer

742. A child's venous blood lead level is 40 micrograms/dL. The following management is **not** indicated:
   a) Chelation therapy
   b) Evaluate sources
   c) Provide education
   d) Repeat within 1 month
   e) Refer to department of health

743. A child's venous blood lead level is 69 micrograms/dL. The preferred therapy is:
   a) BAL
   b) EDTA
   c) DMSA
   d) EDTA and DMSA
   e) EDTA and BAL

744. A child's venous blood lead level is 71 microgram/dL. The preferred therapy in this patient without encephalopathy is:
   a) EDTA
   b) BAL
   c) DMSA
   d) EDTA and DMSA
   e) Hemodialysis

745. A child is diagnosed with lead encephalopathy. The blood lead level is 90 micrograms/dL. The preferred therapy is:
   a) EDTA and BAL
   b) EDTA and DMSA
   c) EDTA
   d) BAL
   e) Hemodialysis

746. A child's venous blood lead level is 19 micrograms/dL. The management includes all of the following **except**:
   a) Repeat within 3 months
   b) Evaluate sources
   c) Education about cleaning
   d) Education about hand-mouth
   e) Refer to the department of health

747. A child's venous blood lead level is 14 micrograms/dL. The management includes all of the following **except**:
   a) Repeat within 3 months
   b) Refer to the department of health
   c) Evaluate sources
   d) Education about cleaning
   e) Education about hand-mouth

748. The most common mode of inheritance in patients with hereditary spherocytosis is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

749. The most common molecular defect in patients with hereditary spherocytosis is:
   a) Actin
   b) Myosin

c) Globin
d) Heme
e) Spectrin

750. The splenectomy is usually indicated in patients with hereditary spherocytosis. The splenectomy is performed:
a) After 1-2 years of age
b) After 2-3 years of age
c) After 3-4 years of age
d) After 4-5 years of age
e) After 5-6 years of age

751. The following laboratory finding is usually noted after splenectomy in patients with hereditary spherocytosis:
a) Anemia
b) Leukopenia
c) Neutropenia
d) Polycythemia
e) Thrombocytosis

752. The usual treatment for postsplenectomy thrombocytosis in patients with hereditary spherocytosis is:
a) Partial exchange transfusion
b) Remove 100 mL of whole blood
c) Double volume exchange transfusion
d) Single volume exchange transfusion
e) Reassurance

753. A 7-year-old boy is diagnosed with hereditary spherocytosis. The laparascopic splenectomy will be performed next week. All of the following treatments are indicated before splenectomy **except**:
a) Folic acid 1 mg/day
b) Penicillin V 250 mg twice daily
c) Pneumococcal vaccine
d) Meningococcal vaccine
e) Haemophilus influenzae type b vaccine

754. A 9-year-old boy appears with an unremitting and gradually increasing pain in the proximal femur. **The pain is worst at night and is relieved by aspirin**. The most likely diagnosis is:
a) Osteoblastoma
b) Ewing sarcoma
c) Chondroblastoma
d) Fibromas
e) Osteoid osteoma

755. Li-Fraumeni syndrome is associated with the following tumor:
a) Ewing sarcoma
b) Osteoid osteoma
c) Osteochondroma
d) Chondroblastoma
e) Osteosarcoma

756. A child is diagnosed with osteosarcoma of the lower part of the femur. His older brother had leukemia. His mother is recently diagnosed with breast cancer. The most likely mutation is noted at:
a) TP53 gene
b) TP50 gene
c) TP51 gene
d) TP52 gene
e) TP54 gene

757. A child is diagnosed with a hereditary retinoblastoma. This child has an increased risk of developing the following tumor:
a) Pituitary tumor
b) Nasopharyngeal carcinoma

- c) Wilms tumor
- d) Rhabdomyosarcoma
- e) Osteosarcoma

758. A child received irradiation therapy for an Ewing sarcoma. The irradiation therapy can cause the following tumor:
- a) Retinoblastoma
- b) Osteosarcoma
- c) Osteoclastoma
- d) Osteoid osteoma
- e) Osteoblastoma

759. Rothmund-Thomson syndrome includes all of the following **except**:
- a) Short stature
- b) Small hands and feet
- c) Skin telangiectasia
- d) Hypoplastic thumb
- e) High risk of osteochondroma

760. A child appears with pain and swelling of the upper part of the right leg. He had a history of injury in that area. He also has mild fever and history of weight loss. The x-ray of the right tibia reveals **onion-skinning**. The most likely diagnosis is:
- a) Osteosarcoma
- b) Osteoid osteoma
- c) Osteochondroma
- d) Enchondroma
- e) Ewing sarcoma

761. A 14-year-old boy appears with pain and swelling of the lower left thigh. He had a history of injury in that area. The physical examination reveals a swollen, tender, warm left lower thigh and left knee. The x-ray reveals a **sunburst** appearance of the lower left femur. The most likely diagnosis is:
- a) Osteosarcoma
- b) Ewing sarcoma
- c) Osteoblastoma
- d) Osteoid osteoma
- e) Osteochondroma

762. A newborn appears with irritability, lethargy, anorexia, failure to thrive, and constipation. The total serum calcium level is 16 mg/dL and serum phosphorus level is 2.8 mg/dL. The x-ray study reveals a resorption of subperiosteal margin of phalanges of hands. The preferred therapy is:
- a) Partial removal of the thyroid gland
- b) Total parthyroidectomy
- c) Irradiation therapy to pituitary gland
- d) Partial removal of the anterior pituitary
- e) Bilateral adrenalectomy

763. The most common cause of hypercalcemia secondary to malignancy is:
- a) Elevated levels of PTH (parathormone)
- b) Decreased levels of PTH
- c) Decreased calcuria
- d) Elevated levels of calcitonin
- e) Elevated levels of parathyroid hormone-related peptide (PTHrP)

764. In what gestational age, a normal newborn usually blinks when a bright light is directed to eyes:
- a) 24 weeks
- b) 26 weeks
- c) 28 weeks
- d) 30 weeks
- e) 32 weeks

765. In what gestational age, a normal newborn maintains eye closure until the light source is removed:
   a) 28 weeks
   b) 30 weeks
   c) 32 weeks
   d) 34 weeks
   e) 36 weeks

766. In what gestational age, a normal newborn turns the head and the eyes to a soft light:
   a) 34 weeks
   b) 35 weeks
   c) 36 weeks
   d) 37 weeks
   e) 38 weeks

767. In what gestational age, a normal newborn develops visual fixation and the ability to follow a bright target:
   a) 32 weeks
   b) 34 weeks
   c) 36 weeks
   d) 38 weeks
   e) 40 weeks

768. In what gestational age, a normal newborn's pupil reacts to light:
   a) 24-25 weeks
   b) 26-27 weeks
   c) 28 weeks
   d) 29-32 weeks
   e) 33-36 weeks

769. The visual acuity of a term infant is approximately:
   a) 20/400
   b) 20/200
   c) 20/150
   d) 20/100
   e) 20/50

770. The mode of inheritance in patients with a Duchenne muscular dystrophy is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

771. The most consistent laboratory finding in patients with a Duchenne muscular dystrophy is:
   a) Elevated aldolase levels in serum
   b) Elevated aspartate levels in serum
   c) Elevated aminotransferase levels in serum
   d) Elevated myoglobin levels in serum
   e) Elevated creatine phosphokinase (CK) levels in serum

772. The preferred diagnostic study in patients with a Duchenne muscular dystrophy is:
   a) Muscle biopsy
   b) Serum CK levels
   c) Serum aldolase levels
   d) Serum myoglobin levels
   e) Serum aspartate levels

773. The American Academy of Pediatrics recommends the goal of universal detection of hearing loss in infants before:
   a) 1 month of age
   b) 2 months of age

c) 3 months of age
d) 4 months of age
e) 6 months of age

774. The appropriate intervention in infants with a hearing loss should be no later than:
a) 1 month of age
b) 3 months of age
c) 6 months of age
d) 9 months of age
e) 12 months of age

775. The language development in infants with hearing loss should be the same level of language as their age-matched peers if the hearing loss is identified and treated before:
a) 1 month of age
b) 3 months of age
c) 4 months of age
d) 6 months of age
e) 9 months of age

776. An 18-month-old boy came for a routine follow-up examination. He does not use single word. His height, weight, and head measurements are appropriate for his age. He is very active. He runs and he plays. The next step in management is:
a) Force him to speak
b) Refer to a speech therapist
c) Refer for audiologic assessment
d) Vision testing
e) Don't give food until he speaks

777. A child came for an audiometric evaluation. Her bone conduction results are much better than that of air conduction. The most likely diagnosis is:
a) Normal hearing
b) Conductive hearing loss
c) Sensorineural hearing loss
d) Autism
e) Gentamicin toxicity

778. A child appears with normal growth and development. The audiometric evaluation of this child should reveal:
a) Air conduction is much better than bone conduction.
b) Bone conduction is much better than air conduction.
c) Air conduction is absent but bone conduction is present.
d) Bone conduction is absent but air conduction is present.
e) Air and bone conductions are same but air conduction is slightly better than bone conduction.

779. A child is diagnosed with congenital CMV infection. The audiometric evaluation of this child should reveal:
a) Air conduction is normal and bone conduction is normal.
b) Air conduction is normal and bone conduction is abnormal.
c) Air conduction is abnormal and bone conduction is normal.
d) Air conduction is absent but bone conduction is present.
e) Air conduction is abnormal and bone conduction is abnormal.

780. A routine physical examination of the newborn reveals a few rashes over the trunk and the face. The lesions are firm, yellow-white, small papule or pustules with a surrounding redness. The Wright-stained smears of the lesion reveals:
a) Neutrophils
b) Eosinophils
c) Basophils
d) Gram-positive bacteria
e) Candida albicans

781. A routine physical examination of the newborn reveals multiple pustules all over the body. Some pustules are ruptured with a fine scale. The pustules usually contain:

a) Eosinophils
b) Basophils
c) S. aureus
d) Herpes simplex virus
e) Polymorphonuclear leukocytes

782. A child suddenly refuses to use his right hand. He cries during movement of the right hand. He was playing with other siblings. His mother lifted him forcibly from the floor. He hold his hand in a pronated position. The next step in management is:
a) X-ray of the elbow joint
b) X-ray of the wrist joint
c) X-ray of the clavicle
d) Rotating the hand and forearm to a extended position
e) Rotating the hand and forearm to a supinated position

783. The most common cardiac defect in patients with Ellis-Van Creveld syndrome is:
a) PDA
b) ASD
c) Tetralogy of Fallot
d) Truncus arteriosus
e) Transposition of great vessels

784. The mode of inheritance in patients with Ellis-Van Creveld syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

785. A 6-year-old boy appears with gross brown-colored urine. He has been suffering from an upper respiratory infection for the last 48 hours. He denies history of trauma. The physical examination reveals mild discomfort in the loin. The following laboratory finding is appropriate for this patient:
a) Elevated ESR
b) Elevated serum C3 levels
c) Normal serum C3 levels
d) Decreased serum IgA levels
e) Elevated WBC counts

The most likely diagnosis is:
a) Acute poststreptococcal glomerulonephritis
b) IgA nephropathy
c) Membranous glomerulopathy
d) Systemic lupus erythematosus
e) Membranoproliferative glomerulonephritis

The prognosis of this condition is:
a) Most patients develop into a chronic renal failure.
b) Most patients develop a UTI.
c) Most patients need a prophylactic antibiotic.
d) Most patients need an antihypertensive medication.
e) Most children will not develop a progressive renal disease.

786. The recommended follow-up for children with a IgA nephropathy:
a) No follow-up is indicated at all.
b) Follow-up is indicated in a symptomatic patient.
c) Follow-up is indicated up to 5 years of age.
d) Follow-up is indicated up to 10 years of age.
e) A careful long-term follow-up is indicated

787. The audiologic evaluation in patients with Alport syndrome usually reveals:
 a) Congenital bilateral sensorineural hearing loss
 b) Congenital bilateral conductive hearing loss
 c) Congenital unilateral conductive hearing loss
 d) Acquired bilateral conductive hearing loss
 e) Acquired bilateral sensorineural hearing loss

788. The following clinical presentation is noted in all patients with Alport syndrome:
 a) Symptomatic gross hematuria
 b) Asymptomatic gross hematuria
 c) Symptomatic gross proteinuria
 d) Asymptomatic gross proteinuria
 e) Asymptomatic microscopic hematuria

789. A newborn is admitted to the NICU with respiratory distress. The newborn was born by NSVD with Apgar scores 8 and 9 at 1 and 5 minutes respectively. The physical examination reveals a grade 2/6 systolic vibratory murmur at the left sternal border. The newborn received 100% oxygen. A peripheral arterial blood gas reveals pH 7.34, $PCO_2$ 45, and $Po_2$ 170. The preductal oxygen saturation is 96% and the postductal oxygen saturation is 97%. The all for extremities BPs are the following: LA 60/30, LL 65/34, RA 62/32, and RL 66/35. The chest x-ray reveals hyperinflation, fluids in the fissure, and very small pleural effusions. The right atrial and right ventricular oxygen saturations are 75%. The left atrial and left ventricular oxygen saturations are 95%. The left ventricular pressure is 100/8 and the aortic pressure is 100/60. The right ventricular pressure is 25/3 and the pulmonary artery pressure is 25/10. The oxygen consumption is 160 L/minute. The oxygen capacity is 200 mL/L. The systemic and pulmonary blood flows are 5 L/minute/meter square. The most likely diagnosis is:
 a) Transposition of great vessels
 b) Total anomalous pulmonary venous return
 c) Tetralogy of Fallot
 d) Critical Pulmonic stenosis
 e) Normal cardiac anatomy

790. The most common site the anomalous pulmonary veins drain into:
 a) Right atrium
 b) Infracardiac
 c) Coronary sinus
 d) Right superior vena cava
 e) Left superior vena cava

791. The most common obstruction type of anomalous pulmonary venous return is:
 a) Infracardiac
 b) Right atrium
 c) Right superior vena cava
 d) Left superior vena cava
 e) Coronary sinus

792. A newborn appears with severe tachypnea and cyanosis at birth. The newborn was intubated and placed on a mechanical ventilator. The newborn remains ill. The physical examination reveals absence of heart murmur but presence of mild intercostals retractions. The chest x-ray reveals a small heart and a perihilar pulmonary edema. The EKG reveals a right ventricular hypertrophy and the tall and spiked P waves. The oxygen saturation in all four chambers are almost the same. The next step in management is:
 a) Blalock-Taussig shunt
 b) Switch operation
 c) Fontan operation
 d) Repair of the truncus arteriosus
 e) Surgical correction of total anomalous pulmonary venous return

793. A newborn appears with mild tachypnea and cyanosis at birth. The newborn received 100% oxygen by oxyhood. The physical examination reveals a grade 2/6 systolic murmur along the left sternal border and a gallop rhythm. The chest x-ray reveals a normal heart size and an increased pulmonary vascularities. The EKG reveals a right ventricular hypertrophy and the tall and spiked P waves. The next step in management is:
 a) Prostaglandin $E_1$ infusions

b) Indomethacin
c) Fontan operation
d) Switch operation
e) Blalock-Taussig shunt

794. The restrictive lung disease includes all of the following conditions **except**:
a) Asthma
b) Pneumonia
c) Scoliosis
d) Pulmonary edema
e) Respiratory distress syndrome

795. The obstructive lung disease includes all of the following conditions **except**:
a) Pulmonary fibrosis
b) Emphysema
c) Bronchiolitis
d) Meconium aspiration
e) Bronchopulmonary dysplasia

796. All of the following conditions cause fixed extrathoracic obstruction **except**:
a) Laryngomalacia
b) Tracheal stenosis
c) Epiglottitis
d) Enlarged tonsils
e) Polyp of the vocal cord

797. A 6-year-old child has all of the following sinuses **except**:
a) Anterior ethmoidal sinuses
b) Sphenoidal sinuses
c) Frontal sinuses
d) Posterior ethmoidal sinuses
e) Maxillary sinuses

798. The following statement is **not** true about sinuses:
a) Ethmoidal sinuses are not pneumatized at birth.
b) Maxillary sinuses are pneumatized at 4 years of age.
c) Sphenoidal sinuses are pneumatized at 5 years of age.
d) Frontal sinuses begin development at 7-8 years of age.
e) Maxillary sinuses are present at birth.

799. The preferred initial therapy for patients with uncomplicated bacterial sinusitis is:
a) Azithromycin
b) Clarithromycin
c) Cefuroxime axetil
d) Cefpodoxime
e) Amoxicillin

800. The preferred initial therapy for patients with frontal sinusitis is:
a) Azithromycin
b) Clarithromycin
c) Ceftazidime
d) Vancomycin
e) Intravenous ceftriaxone

801. A 10-year-old boy appears with an altered mental status, vomiting, headache, and fever. He has been receiving oral amoxicillin for the last 5 days for sinus infections. The physical examination reveals nuchal rigidity and tenderness over the sinuses. Cultures are obtained. CT-scan of the head and sinuses are performed. The next step in management is:
a) Ceftriaxone and cefotaxime
b) Cefotaxime and erythromycin

c) Azithromycin and cefuroxime
d) Ceftazidime and oxacillin
e) Cefotaxime and vancomycin

802. In children with pneumococcal pneumonia, blood cultures are positive in:
a) 1-10% of cases
b) 10-30% of cases
c) 30-50% of cases
d) 50-75% of cases
e) 75-100% of cases

803. The preferred therapy for hospitalized patients with a suspected bacterial pneumonia is:
a) Intravenous ceftriaxone
b) Intravenous cefuroxime
c) Oral azithromycin
d) Intravenous vancomycin
e) Intravenous ticarcillin

804. The preferred therapy for mildly ill patients with a suspected bacterial pneumonia is:
a) Oral penicillin
b) Oral amoxicillin
c) Oral erythromycin
d) Oral tetracycline
e) Oral azithromycin

805. The most common presentation in neonates with autosomal recessive polycystic kidney disease (ARPKD) is:
a) Gross hematuria
b) Hypertension
c) Potter facies
d) Bilateral renal masses
e) Spontaneous pneumothorax

806. The following disease is usually associated in patients with ARPKD (autosomal recessive polycystic kidney disease):
a) Spleen disease
b) CNS disease
c) Cardiac disease
d) Adrenal disease
e) Liver disease

807. Initial evaluation of a patient during or shortly after the seizure activities includes all of the following **except**:
a) Cardiac function
b) Ventilation
c) Airway
d) Temperature
e) EEG

808. A patient appears with the first seizure activities. All of the following serious causes of seizures should be ruled out for an acute evaluation **except**:
a) Ingestion of drugs
b) Head trauma
c) Cholestatic jaundice
d) Systemic sepsis
e) Meningitis

809. A child appears with focal seizure activities. Focal findings are noted on EEG and MRI involving temporal lobes. The most likely diagnosis is:
a) Localized head trauma
b) GBS meningitis
c) Perinatal asphyxia

d) Ingestion of drugs
e) HSV encephalitis

810. The following medication causes red-orange urine and sweat, and stains contact lenses:
a) Tetracycline
b) Erythromycin
c) INH
d) Rifampin
e) Chloramphenicol

811. The most common opthalmologic finding present at birth in a patient with Peters anomaly is:
a) Cataract
b) Glaucoma
c) Microcornia
d) Iridocorneal adhesion
e) Central corneal opacity

812. The most common type of strabismus in children is:
a) Third cranial nerve palsy
b) Fourth cranial nerve palsy
c) Sixth cranial nerve palsy
d) Esodeviation nonparalytic type
e) Exodeviation nonparalytic type

813. The most serious complications in children with strabismus is:
a) Development delay
b) Decreased intellectual activities
c) Brain tumor
d) Hydrocephalus
e) Amblyopia

814. The potential complication of a surgically placed cochlear implant is:
a) Profound deafness
b) Ear ache
c) Middle ear infection
d) Mastoiditis
e) Pneumococcal meningitis

815. The most common organism in patients with bullous impetigo is:
a) S. aureus type 3A
b) S. aureus type 3B
c) S. aureus type 55
d) S. aureus type 71
e) Strepococcus pneumoniae

816. The most common organism in patients with nonbullous impetigo is:
a) Streptococcus pneumoniae
b) Herpes simplex virus
c) S. aureus
d) Pseudomonas aeruginosa
e) Candida albicans

817. The most common site of injury in patients who are competitive swimmers is:
a) Head
b) Eye
c) Wrist
d) Leg
e) Shoulder

818. A 20-month-old boy appears with hydrocele in the right side. The next step in management:
   a) Elevate the scrotum
   b) Put the leg elevated while sleeping
   c) Restrict oral fluids intake
   d) Warm sitz bath
   e) Surgical repair

819. A routine physical examination of the newborn reveals a bilateral scrotal swelling. The swelling is nontender, soft, and has a positive transillumination test. The following statement is **not** true about this condition:
   a) In most cases, swelling resolves within 6 months of age.
   b) The swelling is a nonmalignant condition.
   c) The large and tense swelling needs surgical repair.
   d) In most cases, swelling is not reducible.
   e) Surgical repair is similar to a herniorrhaphy.

820. The most common presentation in patients with paroxysmal nocturnal hemoglobinuria is:
   a) Marrow failure
   b) Renal failure
   c) Spleen failure
   d) Liver failure
   e) Cardiac failure

821. The preferred diagnostic study in patients with paroxysmal nocturnal hemoglobinuria is:
   a) Flow cytometry
   b) Serum hemolysis test
   c) Sucrose lysis test
   d) Detection of hemoglobin in urine
   e) Detection of hemosiderin in urine

822. The most common cause of death during the first year after renal transplantation is:
   a) Renal failure
   b) Cardiac failure
   c) Infection
   d) Pulmonary failure
   e) Adrenal failure

823. The most common organism causing infection in patients after renal transplantation is:
   a) Pneumocystis carinii
   b) Herpes simplex virus
   c) Varicella-zoster virus
   d) Hepatitis C virus
   e) CMV

824. The following syndrome is **not** associated with leukemia:
   a) William syndrome
   b) Fanconi syndrome
   c) Bloom syndrome
   d) Schwachman syndrome
   e) Down syndrome

825. In a case of suspected digoxin toxicity, serum digoxin level should be obtained:
   a) Immediate after a dose
   b) 30 minutes after a does
   c) 1 hour after a dose
   d) 2 hours after a dose
   e) Immediately before a dose but at minimum 4 hours after the last dose

826. The following condition increases digitalis toxicity:
   a) Hyperkalemia

b) Hypernatremia
c) Hyponatremia
d) Hypocalcemia
e) Hypokalemia

827. The digoxin therapy should be discontinued in the following condition:
a) Prolongation of P-R intervals
b) Changes in ST segments
c) Changes in T-waves
d) Blood level is 3 ng/mL in infants
e) Disturbances in new rhythms

828. The following drug does **not** cause thrombocytopenia:
a) Phenytoin
b) Valproic acid
c) Intravenous immunoglobulin
d) Sulfonamides
e) Trimethoprim-sulfamethoxazole

829. The most common organism in patients with hemolytic uremic syndrome (HUS) is:
a) S. pneumoniae
b) Shigella
c) Campylobacter
d) Bartonella
e) E. coli

830. The preferred diagnostic method in patients with renal vein thrombosis is:
a) Intravenous pyelography
b) Ultrasonography
c) Renal scan
d) VCUG
e) Doppler flow studies

831. All of the following clinical manifestations can occur in patients with iron deficiency **except**:
a) Decreased attention span
b) Decreased learning
c) Always underweight
d) Decreased memory
e) Decreased neurologic function

832. An exclusively breast-fed infant should receive iron supplementation from:
a) Birth
b) 1 month of age
c) 2 months of age
d) 4 months of age
e) 6 months of age

833. The amount of iron should be absorbed each day from birth until 15 years of age is:
a) 0.4 mg
b) 0.8 mg
c) 1.2 mg
d) 2.0 mg
e) 5 mg

834. The amount of iron should be present in diet each day is:
a) 4-6 mg
b) 6-8 mg
c) 8-10 mg

d) 10-12 mg
e) 12-14 mg

835. A newborn appears with severe cyanosis and respiratory distress at birth. The physical examination reveals a holosystolic murmur, gallop rhythm, and multiple clicks over the left sternal border. The chest x-ray reveals a massive cardiomegaly. The EKG reveals a right bundle branch block and WPW syndrome. The child is placed on a mechanical ventilator and infusion of PGE1 started. The next step in management is:
a) Aortopulmonary shunt
b) Blalock-Taussig shunt
c) Switch operation
d) Surgical closure of VSD
e) Surgical closure of ASD

836. The preferred test for pulmonary function is:
a) Pulmonary scan
b) Pulmonary angiogram
c) Lung CT scan
d) Lung MRI
e) Arterial blood gas

837. The most common cause of acquired laryngotracheal stenosis is:
a) Infection
b) Reflux of gastric acid
c) Reflux of gastric pepsin
d) Bleeding
e) Endotracheal intubation

838. The most serious side effect of warfarin is:
a) Bleeding
b) Gastric irritation
c) Thrombocytopenia
d) Decreased WBC counts
e) Bone marrow suppression

839. The warfarin-induced bleeding is treated with:
a) Vitamin K
b) P-RBCs transfusion
c) Platelet transfusions
d) Exchange transfusion
e) Reassurance

840. Hemorrhagic cystitis is a complication of the following drug:
a) Cyclophosphamide
b) Methotrexate
c) Bleomycin
d) Cisplatin
e) L-Asparaginase

841. Peripheral neuropathy is a complication of the following drug:
a) Doxorubicin
b) Dactinomycin
c) 6-Mercaptapurine
d) Procarbazine
e) Vincristine

842. The most common cause in newborns with LGA (large for gestational age) is:
a) Maternal obesity
b) Beckwith-Wiedemann syndrome
c) Maternal diabetes

d) Wilms tumor
e) Simpson-Golabi-Behmel overgrowth syndrome

843. The most common chromosomal anomaly in DiGeorge/velocardiofacial syndrome is:
a) Deletion of chromosome 5
b) Deletion of chromosome 21
c) Deletion of chromosome 16
d) Trisomy of chromosome 22
e) Deletion of chromosome 22

844. The most common associated anomaly in patients with DiGeorge/velocardiofacial syndrome is:
a) Aplasia of thymus
b) Renal anomalies
c) Cleft palate
d) Truncus arteriosus
e) Velopharyngeal insufficiency

845. A child suddenly developed a difficulty to move the right eye laterally. He has been suffering from the right otitis media and the tympanic membrane perforation for the last 6 months. He denies history of a vomiting. He has no headaches. The most likely diagnosis is:
a) Mobius syndrome
b) Brown syndrome
c) Duane syndrome
d) Double elevator palsy
e) Gradenigo syndrome

846. A routine physical examination of the child reveals a silvery-gray waxed paper appearance of the tympanic membrane. The most likely diagnosis is:
a) Otitis media
b) Wax on the tympanic membrane
c) Otitis externa
d) Otitis interna
e) Normal ear drum

847. A 2-year-old child was crying constantly during waiting in the clinic. A routine physical examination reveals a red tympanic membrane. He has no fever, vomiting, or irritability. The most likely diagnosis is:
a) Otitis media
b) Trauma in the ear drum
c) Trauma in the ear canal
d) Otitis interna
e) Normal tympanic syndrome

848. The usual mode of inheritance in patients with familial hypophosphatemia is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

849. The usual side effect of oral phosphate therapy in patients with familial hypophosphatemia is:
a) Vomiting
b) Diarrhea
c) Constipation
d) Obstipation
e) Gastrointestinal bleeding

850. The ideal age to repair a hypospadius in a healthy infant is:
a) 0-3 months
b) 4-5 months

c) 6-12 months
d) 13-18 months
e) 19-24 months

851. A 2½-year-old boy came for a routine physical examination. His prepuce cannot be retracted. He is asymptomatic. The next step in management is:
a) Circumcision
b) Topical estrogen cream
c) Forceful retraction
d) Topical Neosporin cream
e) Reexamination after 6 months

852. A 3-year-old-boy is diagnosed with phimosis. He has no symptoms. The next step in management is:
a) Topical estrogen cream
b) Topical corticosteroid cream
c) Circumcision immediately
d) Topical androgen cream
e) Circumcision after 1 year

853. An 11-year-old boy appears with phimosis. He is asymptomatic. The next step in management is:
a) Circumcision
b) Topical bacitracin cream
c) Forceful retraction
d) Topical estrogen cream
e) Reassurance

854. A boy appears with ballooning of the foreskin during voiding. The most likely diagnosis is:
a) Ambiguous genitalia
b) Phimosis
c) Paraphimosis
d) Penile torsion
e) Meatal stenosis

855. The Silver-Russel syndrome may include all of the following findings **except**:
a) LGA
b) Triangular face
c) Frontal bossing
d) Shortened 5th finger
e) Hemihypertrophy

856. In a 3-month-old child, the normal CSF protein values are between:
a) 1-9 mg/dL
b) 10-40 mg/dL
c) 41-70 mg/dL
d) 71-100 mg/dL
e) 101-130 mg/dL

857. In neonates, the normal CSF protein values are as high as:
a) 40 mg/dL
b) 80 mg/dL
c) 120 mg/dL
d) 200 mg/dL
e) 250 mg/dL

858. All of the following drugs can cause neural tube defects in fetuses **except**:
a) Valproic acid
b) Phenytoin
c) Phenobarbital
d) Trimethoprim
e) Insulin

859. The risk of recurrence after one child is affected with meningomyelocele is:
    a) 1-2%
    b) 3-4%
    c) 5-9%
    d) 10-15%
    e) 25%

860. The risk of recurrence after two children are affected with meningomyelocele is:
    a) 5%
    b) 10%
    c) 25%
    d) 50%
    e) 66%

861. The peripheral blood smear in a patient with abetalipoproteinemia reveals:
    a) Megakaryocytes
    b) Spherocytes
    c) Heinz bodies
    d) Lmphoblasts
    e) Acanthocytes

862. The ataxia telangiectasia is caused by mutations in the ATM gene located at:
    a) Chromosome 5
    b) Chromosome 7
    c) Chromosome 11
    d) Chromosome 13
    e) Chromosome 22

863. The preferred therapy for patients with S. pneumoniae meningitis is:
    a) Penicillin and cefotaxime
    b) Ampicillin and ceftriaxone
    c) Penicillin and vancomycin
    d) Vancomycin
    e) Vancomycin and cefotaxime

864. The preferred therapy for patients with S. pneumoniae meningitis and are allergic to beta-lactam antibiotics is:
    a) Azithromycin and ticarcillin
    b) Trimethoprim-sulfamethoxazole and cefotaxime
    c) Vancomycin and ceftriaxone
    d) Cefotaxime and vancomycin
    e) Chloramphenicol

865. The preferred therapy for immunocompromised patients with a suspected gram-negative bacterial meningitis is:
    a) Ceftazidime and gentamicin
    b) Vancomycin and gentamicin
    c) Cefotaxime and vancomycin
    d) Azithromycin and cefotaxime
    e) Ciprofloxacin and cefotaxime

866. Intravenous dexamethasone is useful in patients with meningitis caused by the following organism:
    a) Herpes simplex virus
    b) S. pneumoniae
    c) H. influenzae type b
    d) N. meningitidis
    e) L. monocytogenes

867. The following statement is **not** true about child labor:
    a) The child labor is almost absent in USA.
    b) The child labor is widespread all over the world, especially Asian countries.

c) The child labor can cause a physical trauma and injury.
d) The child labor can increase their exposure to toxic chemicals.
e) The children usually work in gas station, agricultural sites, lawn, demolition and construction sites.

868. The preferred method to detect environmental exposures in children is:
a) History
b) Physical examination
c) Urinalysis
d) Urine toxicology
e) Chest x-ray

869. The environmental exposure is suspected in a child. The next step in management is:
a) Admit the child in hospital
b) Isolate the child in a pediatric unit
c) Administrators should be notified immediately
d) Call 911 emergency service
e) Refer to a pediatric environmental specialty unit

870. The most common organism in patients with Lemierre disease is:
a) Group A Streptococcus
b) S. aureus
c) Haemophilus influenzae
d) Klebsiella
e) Fusobacterium necrophorum

871. A 16-year-old healthy adolescent appears with sudden onset fever, respiratory distress, and cough. He has been suffering from acute tonsillopharyngitis for the last 3 days. The chest x-ray reveals multiple bilateral cavitary nodules and mild pleural effusions. The preferred therapy is:
a) Penicillin
b) Ciprofloxacin
c) Vancomycin
d) Gentamicin
e) Ceftazidime

872. The following medication should be avoided in patients with influenza:
a) Acetaminophen
b) Ibuprofen
c) Aspirin
d) Antihistamine
e) Naproxen sodium

873. A 6-year-old girl appeared with a febrile illness and upper respiratory tract infections. She was treated conservatively and improved. Six days later, she started severe vomiting. She was brought to the ER. Delirium, combative behavior, and stupor are noted within two hours. The physical examination reveals mild hepatomegaly. The laboratory test results reveal elevated liver enzymes, lactic dehydrogenase, creatinine kinase, and ammonia. The most likely diagnosis is:
a) Viral hepatitis
b) Disseminated intravascular coagulation
c) Viral meningitis
d) Autoimmune hepatitis
e) Reye syndrome

874. The side effect of ceftriaxone is:
a) Cholestasis
b) Anaphylactic reaction
c) Hepatic vein thrombosis
d) Biliary sludge
e) Acute nephritis

875. The following medication can cause cholestatic hepatitis:
   a) Androgens
   b) Acetaminophen
   c) Valproic acid
   d) Erythromycin estolate
   e) Phenytoin

876. All of the following are clinical manifestations in patients with fulminant liver failure **except**:
   a) Progressive jaundice
   b) Vomiting
   c) Fever
   d) Fetor hepaticus
   e) A rapid increase in liver size

877. The following condition can give a false-negative sweat chloride test result:
   a) Adrenal insufficiency
   b) Hypoproteinemic edema
   c) Ectodermal dysplasia
   d) Hereditary nephrogenic diabetes insipidus
   e) Hypothyroidism

878. The most common presenting symptom in patients with cystic fibrosis (CF) is:
   a) Respiratory symptoms
   b) Failure to thrive
   c) Abnormal stools
   d) Meconium ileus
   e) Family history of CF

879. The following statement is **not** true about the newborn screening of cystic fibrosis:
   a) The diagnosis in newborns can prevent early nutritional deficiencies.
   b) The diagnosis in newborns can improve long-term growth.
   c) The diagnosis in newborns can improve pulmonary conditions.
   d) The diagnosis in newborns is made by determination of immunoreactive trypsinogen in blood spots.
   e) The newborn screening test is 95% sensitive.

880. The most common cause of renal cortical necrosis in newborns is:
   a) Gentamicin
   b) Vancomycin
   c) Ampicillin
   d) Forcep delivery
   e) Hypoxia

881. The most common clinical manifestation in patients with a persistent Mullerian duct syndrome is:
   a) Cryptorchidism is noted
   b) Fallopian tube is present
   c) Uterus is present
   d) Epididymis is present
   e) Vas deferens is present

882. All of the following conditions can cause xanthochromic CSF **except**:
   a) Subarachnoid hemorrhage
   b) Carotenemia
   c) Hyperbilirubinemia
   d) A markedly elevated CSF protein
   e) A markedly elevated CSF WBC counts

883. A child experienced sudden respiratory arrest and death after a motor vehicle accident. The most likely site of injury is:
   a) C 1 - C 2
   b) C 3 - C 4

c) C 5 - C 6
d) L 1 - L 2
e) L 3 - L 4

884. A child experienced a flaccid quadriparesis, loss of urinary bladder control, and sensory level corresponding to the upper sternum secondary to a motor vehicle accident. The most likely site of injury is:
a) C 1 - C 2
b) C 3 - C 4
c) C 5 - C 6
d) C 7 - T 1
e) T 1 - T 2

885. All of the following disease can cause Bell palsy **except**:
a) Lyme disease
b) Herpes simplex virus infection
c) Epstein-Barr virus infection
d) Mumps virus infection
e) S. pneumoniae infection

886. A 7-year-old child is diagnosed with Guillain-Barre syndrome. The CSF findings for this child should be:
a) Protein is 120 mg/dL, glucose is 60, and monocytes are 2.
b) Protein is 10 mg/dL, glucose is 40, and monocyte is 0.
c) Protein is 20 mg/dL, glucose is 50, and monocytes are 3.
d) Protein is 80 mg/dL, glucose is 20, and polymorphs are 30.
e) Protein is 60 mg/dL, glucose is 35, and lymphocytes are 25.

887. A child is diagnosed with Bell palsy. Bell palsy may be associated with:
a) Hypothermia
b) Hyperthermia
c) Hypotension
d) Hypertension
e) Hypocalcemia

888. A 10-year-old girl is diagnosed with pheochromocytoma. She appears with a gross hematuria. The most likely site of tumor is:
a) Adrenal medulla
b) Renal artery
c) Thoracic cavity
d) Aortic bifurcation
e) Urinary bladder

889. The sexual precocity in patients with an organic brain lesion (e.g., hypothalamic hamartoma) is:
a) Always heterosexual
b) Always bisexual
c) Sometimes heterosexual
d) Sometimes isosexual
e) Always isosexual

890. A child developed precocious puberty following irradiation therapy of the brain. The child may have the following associated finding:
a) Elevated thyroid hormones
b) Elevated growth hormones
c) Elevated parathyroid hormones
d) Decreased adrenal cortical hormones
e) Decreased growth hormones

891. A child appears with nausea, vomiting, decreased appetite, lethargy, and fever. The child had a surgical repair of VSD 7 days age. He denies chest pain. The findings in echocardiogram may reveal:
a) Recurrence of VSD
b) Mitral valve stenosis

c) Aortic valve stenosis
d) Pulmonary valve regurgitation
e) Pericardial fluid

892. The preferred therapy for patients with a postpericardiotomy syndrome is:
a) Salicylates
b) Propranolol
c) Cefuroxime
d) Furosemide
e) Temporary pace maker

893. A 15-yar-old healthy boy appears with a stabbing pain in the chest. The pain radiates to the neck. He denies history of trauma. The physical examination reveals subcutaneous emphysema. The most likely diagnosis is:
a) Pneumothorax
b) Fracture ribs
c) Critical aortic stenosis
d) Myocardial infarction
e) Pneumomediastinum

894. A child is suspected to have recurrent aspirations. The initial study should be:
a) Milk scan
b) Barium-swallow
c) Upper GI series
d) Ultrasonography
e) Plain chest x-ray

895. A 3-month-old child with SIDS (sudden infant death syndrome) was brought to the ER. The physical examination most likely reveals:
a) External bruises
b) Enlarged liver
c) Enlarged spleen
d) Proptosis
e) Petechial hemorrhage

896. The following is a contraindication to surgical closure of VSD:
a) Severe pulmonary vascular disease with VSD
b) Supracrystal VSD
c) Qp : Qs ratio greater than 2:1 in a patient older than 24 months of age
d) Large VSD with failure to thrive
e) Large VSD with a developing pulmonary hypertension

897. The side effect of cyclosporine used in patients with a transplantation is:
a) Hypotension
b) Hypertension
c) Cardiac arrythmias
d) Hair loss
e) Elevated cholesterol levels

898. The most common cause of heart transplants in children **older than 1 year of age** is:
a) Tetralogy of Fallot
b) Hypoplastic right heart
c) Transposition of great vessels
d) Hypoplastic left heart syndrome
e) Cardiomyopathies

899. The most common cause of heart transplants in children **younger than 1 year of age** is:
a) Sinus arrythmia
b) Sinus bradycardia
c) Anomalous coronary artery

d) Total anomalous pulmonary venous return
e) Hypoplastic left heart syndrome

900. The most common cause of acquired hypothyroidism is:
a) Subtotal thyroidectomy
b) Cystinosis
c) Irradiation therapy
d) Lymphocytic thyroiditis
e) Propylthiouracil overdose

901. The most common cause of metabolic acidosis in children is:
a) Renal tubular acidosis type I
b) Renal tubular acidosis type II
c) Persistent vomiting
d) Diarrhea
e) Gram-negative sepsis

902. In girls, the growth spurt peaks at:
a) 10½ years of age
b) 11 years of age
c) 11½ years of age
d) 12 years of age
e) 13 years of age

903. In boys, the growth spurt peaks at:
a) 12½ years of age
b) 13 years of age
c) 13½ years of age
d) 14 years of age
e) 15 years of age

904. In girls, the growth stops at:
a) 14 years of age
b) 15 years of age
c) 16 years of age
d) 17 years of age
e) 18 years of age

905. In boys, the growth stops at:
a) 16 years of age
b) 17 years of age
c) 18 years of age
d) 19 years of age
e) 20 years of age

906. The relationship between the onset of menstruation and the growth spurt is:
a) Menarche occur approximately 1 year before the growth spurt begins.
b) Menarche occur approximately 2 years before the growth spurt begins.
c) Menarche occur approximately the same time of beginning of the growth spurt.
d) Menarche occur approximately 1 year after the growth spurt begins.
e) Menarche occur approximately 2 years after the growth spurt begins.

907. The mode of inheritance in patients with Rett disorder is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

908. A newborn developed seizure activities secondary to hypoglycemia. The infusion of intravenous glucose bolus should be the following:
a) 2 mL/kg of 5% glucose
b) 2 mL/kg of 10% glucose
c) 4 mL/kg of 5% glucose
d) 4 mL/kg of 10% glucose
e) 10 mL/kg of 10% glucose

909. An infant of a diabetic mother developed hypoglycemia. The child is mildly jittery. The infusion of intravenous glucose bolus should be the following:
a) 2 mL/kg of 5% glucose
b) 2 mL/kg of 10% glucose
c) 4 mL/kg of 5% glucose
d) 4 mL/kg of 10% glucose
e) 4 mL/kg of 12.5% glucose

910. The nadir in blood glucose concentration in an infant of diabetic mother is usually occur between:
a) 0-1 hour of age
b) 1-3 hours of age
c) 3-6 hours of age
d) 6-12 hours of age
e) 12-24 hours of age

911. The mode of inheritance in patients with Brachmann-deLange syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

912. The teratogenic effects of isotretinoin (Accutane) includes all of the following **except**:
a) Large deformed ears
b) CNS defects
c) Cardiovascular defects
d) Thymus defects
e) Decreased intelligence

913. The preferred therapy for patients with a Ureaplasma Urealyticum infection is:
a) Penicillin
b) Cefotaxime
c) Gentamicin
d) Ampicillin
e) Erythromycin

914. In late-onset sepsis in VLBW (very low birth weight i.e., less than 1500 grams birth weight) infants, the following organism causes the highest mortality:
a) S. aureus
b) S. epidermidis
c) Pseudomonas
d) Serratia
e) Candida albicans

915. The preferred therapy for patients with a B. fragilis meningitis is:
a) Pleconaril
b) Ceftazidime
c) Gentamicin
d) Metronidazole
e) Ampicillin

916. The preferred therapy for patients with a severe enteroviral infection (e.g., meningitis, hepatitis, carditis) is:
a) Gentamicin
b) Cefotaxime
c) Clindamycin
d) Erythromycin
e) Pleconaril

917. All of the following laboratory findings are increased due to smoking **except**:
a) Serum creatinine
b) WBC counts
c) Hemoglobin
d) Mean corpuscular volume
e) Platelet aggregations

918. The preferred method of smoking cessation in adolescents is:
a) Smokeless tobacco
b) Nicotine gum
c) Nicotine patch
d) Nicotine spray
e) Bupropion

919. The side effect of regular use of smokeless tobacco (SLT) is:
a) Hypotension
b) Polyuria
c) Hypoglycemia
d) Loss of sphincter control
e) Physical dependence

920. The side effect of chronic use chewing tobacco is:
a) Herpes simplex virus
b) Lock jaw
c) Hairy tongue
d) Ulcers on the palate
e) Malignancy

921. The methacoline challenge testing is performed to diagnose a suspected case of:
a) Food allergy
b) Bronchial asthma
c) Cystic fibrosis
d) Tuberculosis
e) Cardiac arrythmias

922. The most common abnormality noted on examination of blood in patients with a history of allergy is:
a) High neutrophil counts
b) High lymphocyte counts
c) Low monocyte counts
d) Low neutrophil counts
e) High eosinophil counts

923. The preferred test for documenting the presence of allergen-specific IgE in the serum is:
a) Methacholine test
b) Skin test
c) Serum IgE levels
d) Provocation test
e) Radioallergosorbent test (RAST)

924. A child experienced life-threatening allergic reaction to an insect bite. The RAST is negative. The next step in management to confirm the diagnosis is:
a) Skin test

b) Methacholine test
c) Repeat RAST
d) Serum IgE levels
e) Provocation test

925. The following CSF findings are appropriate for patients with a tuberculous meningitis:
a) Leukocyte counts are 2000, mostly polymorphs, glucose is 8 mg/dL, and protein is 350 mg/dL.
b) Leukocyte counts are 200, mostly lymphocytes, glucose is 50 mg/dL, and protein is 60 mg/dL.
c) Leukocyte counts are 350, mostly monocytes, glucose is 40 mg/dL, and protein is 70 mg/dL.
d) Leukocyte counts are 4,500, mostly lymphocytes, glucose is 30 mg/dL, and protein is 100 mg/dL.
e) Leukocyte counts are 400, mostly lymphocytes, glucose is 35 mg/dL, and protein is 3,900 mg/dL.

926. If a mother is PPD positive and has a negative chest x-ray, the newborn infant should be:
a) Separated from the mother
b) Given INH prophylaxis
c) Evaluated with a chest radiography
d) Evaluated with a PPD testing
e) With the mother

927. A mother has an active pulmonary tuberculosis. All of the following statements are true about management of the newborn **except**:
a) The newborn should receive INH therapy.
b) The newborn should be isolated from the mother regardless of her symptoms during INH therapy.
c) The newborn should be isolated from the mother if she has drug-resistant tuberculosis, she is noncompliance, and she is ill enough to require hospitalization.
d) The newborn should receive INH therapy until the mother's sputum cultures are negative for at least 3 months.
e) The newborn should receive a Mantoux tuberculin skin test after 3 months of age. If positive, INH should be continued for a total duration of 9-12 months.

928. The preferred therapy for a pregnant woman with an active pulmonary tuberculosis is a combination of:
a) INH, pyrazinamide, and rifampin
b) INH, ethionamide, and ethambutol
c) Rifampin, ethambutol, and ethionamide
d) INH, rifampin, and ethambutol
e) Streptomycin, INH, and rifampin

929. A 12-year-old boy appears with a persistent cough, headache, fever, malaise, and hoarseness for the last 6 days. Coryza is absent. He produces a frothy, white sputum. Initially the cough was nonproductive. The physical examination reveals a fine crackles on the right chest. The chest x-ray reveals right lower lobe interstitial infiltrates. The preferred therapy for this patient is:
a) Symptomatic therapy
b) Ampicillin
c) Cefotaxime
d) Ceftriaxone
e) Azithromycin

930. Neurologic complications of patients with Mycoplasma pneumonia includes all of the following **except**:
a) Guillain-Barre syndrome
b) Bell palsy
c) Transverse myelitis
d) Hyperacusis
e) Aseptic meningitis

931. The major outer membrane protein (MOMP) is present in the following organism:
a) Chlamydia pneumoniae
b) Chlamydia trachomatis
c) Mycoplasma pneumoniae
d) Mycoplasma hominis
e) Ureaplasma urealyticum

932. The clinical manifestation in patients with SLE (systemic lupus erythematosus) and antiribosomal P antibodies is:
  a) Hypothyroidism
  b) Hemolytic anemia
  c) Coagulopathy
  d) Lupus cerebritis
  e) Antiphospholipid antibody syndrome

933. The following condition is **not** associated with ANA (antinuclear antibodies):
  a) Sjogren syndrome
  b) Scleroderma
  c) Chronic active hepatitis
  d) Infectious mononucleosis
  e) Hyperextensibility

934. A 17-year-old male appears with scrotal swelling for the last 7 days. He is sexually active. He experienced an urethral discharge that resolved spontaneously. The physical examination reveals a scrotal tenderness. The most likely diagnosis is:
  a) Testicular torsion
  b) Epididymitis
  c) Hydrocele
  d) Inguinal hernia
  e) Seminoma

935. A 16-year-old male appears with a **yellow-green purulent urethral discharge** for the last 24 hours. The most likely diagnosis is:
  a) Chlamydia urethritis
  b) Herpes simplex virus urethritis
  c) Gonococcus urethritis
  d) Primary syphilis
  e) Pseudomonas cystitis

936. A 15-year-old male appears with a **white mucopurulent urethral discharge** for the last 3 days. The most likely diagnosis is:
  a) Gonococcus urethritis
  b) Viral prostatitis
  c) Bacterial prostatitis
  d) Chlamydia urethritis
  e) E. coli cystitis

937. An infant is admitted with the diagnosis of nonorganic failure to thrive. The infant should receive approximately:
  a) 100 kcal/kg/day (actual weight)
  b) 120 kcal/kg/day (ideal weight)
  c) 150 kcal/kg/day (actual weight)
  d) 150 kcal/kg/day (ideal weight)
  e) 175 kcal/kg/day (actual weight)

938. The most children started to walk independently about:
  a) 9 months of age
  b) 10 months of age
  c) 11 months of age
  d) 12 months of age
  e) 14 months of age

939. The most children use four to six words spontaneously, correctly, including proper nouns about:
  a) 12 months of age
  b) 15 months of age
  c) 18 months of age
  d) 24 months of age
  e) 30 months of age

940. The children use 10 to 15 vocabulary words about:
  a) 12 months of age
  b) 15 months of age
  c) 18 months of age
  d) 24 months of age
  e) 30 months of age

941. The children use 100 or more vocabulary words about:
  a) 2 years of age
  b) 2½ years of age
  c) 3 years of age
  d) 4 years of age
  e) 5 years of age

942. The following statement is correct regarding language developments in children between 2 to 5 years of age:
  a) A 2-year-old uses 2 words in a sentence.
  b) A 3-year-old uses 2 words in a sentence.
  c) A 4-year-old uses 5 words in a sentence.
  d) A 5-year-old uses 4 words in a sentence.
  e) A 5-year-old uses 6 words in a sentence.

943. The children speak ‘My toy’, ‘I eating’ about:
  a) 2 years of age
  b) 2½ years of age
  c) 3 years of age
  d) 3½ years of age
  e) 4 years of age

944. The children use past tense about:
  a) 2 years of age
  b) 3 years of age
  c) 4 years of age
  d) 5 years of age
  e) 6 years of age

945. The children use future tense about:
  a) 3 years of age
  b) 4 years of age
  c) 5 years of age
  d) 6 years of age
  e) 7 years of age

946. In children, all 20 primary teeth have erupted by:
  a) 2 years of age
  b) 3 years of age
  c) 4 years of age
  d) 5 years of age
  e) 6 years of age

947. The most common cause of encopresis in children is:
  a) Rectal incontinence
  b) Mental retardation
  c) Chronic diarrhea
  d) Chronic use of laxatives
  e) Chronic constipation

948. The most common cause of daytime enuresis in preschool children is:
  a) UTI
  b) Diabetes mellitus

c) Stress incontinence
d) Giggle incontinence
e) Waiting until the last minute to void urine

949. A mother of a few months old child wants to know about the required water intake for her child. The child is receiving breast milk adequately since birth. The child gains weight approximately. The most likely required water intake should be:
a) None
b) ½ ounce per day
c) 1 ounce per day
d) 1½ ounces per day
e) 2 ounces per day

950. The intake of cow milk is allowed after:
a) 12 months of age
b) 15 months of age
c) 18 months of age
d) 24 months of age
e) 30 months of age

951. The normal absolute requirement for water in infants is:
a) 50-74 mL/kg/day
b) 75-100 mL/kg/day
c) 101-125 mL/kg/day
d) 126-150 mL/kg/day
e) 151-175 mL/kg/day

952. A 12-hour-old newborn appears with lethargy, poor suck, and severe hypotonia. Sepsis work up was performed including spinal tap. Subsequently, the newborn required a mechanical ventilation for several apneic episodes. The physical examination reveals hiccups, myoclonic seizures, and profound hypotonia. The laboratory test findings do **not** include the following:
a) Serum pH is acidotic.
b) Elevated glycine concentration is blood
c) Decreased serine levels in plasma
d) Elevated glycine concentration in urine
e) A ratio of glycine concentration in CSF to that in plasma is more than 0.08

953. The most common form of nonketotic hyperglycinemia (NKH) is:
a) Neonatal
b) Infantile
c) Transient
d) Late-onset
e) Unknown

954. Surfactant has the highest concentration of the following component:
a) Neutral lipids
b) Phosphatidylinositol
c) Phosphatidylglycerol
d) Phosphatidlcholine
e) Phosphatidylethanolamine

955. The most immediate effect in patients using anabolic steroids is:
a) Hirsutism
b) Oily hair
c) Stria
d) Keloids
e) Acneform lesions

956. The effects of anabolic steroids in males includes all of the following **except**:
a) Gynecomastia
b) Breast pain

c) Azoospermia
d) Enlarged testes
e) Growth retardation in early adolescents

957. The effects of anabolic steroids in females includes all of the following **except**:
a) Breast hypertrophy
b) Enlarged clitoris
c) Menstrual irregularities
d) Hirsutism
e) Growth retardation in early adolescents

958. The very high dose of anabolic steroids can cause all of the following **except**:
a) Euphoria
b) Mania
c) Mood fluctuations
d) Alterations in libido
e) Uncontrollable rage

959. The effects of maternal use of cocaine on fetuses may include all of the following **except**:
a) Hypotension
b) Congenital malformations
c) Low birthweight
d) Premature delivery
e) Developmental disorders

960. Most of the patients with atopic dermatitis develop:
a) Otitis media
b) Chronic pharyngitis
c) Chronic tonsillitis
d) Chronic sinusitis
e) Allergic rhinitis

961. A child appears with anal pruritis, painful defecation, perianal erythema, and blood-streaked stools. The physical examination reveals flat, pink to beefy-red perianal redness with well-demarcated margins extending up to 2 cm from the anus. The most likely diagnosis is:
a) Perianal streptococcal disease
b) Fungal infection
c) Allergic reaction
d) Anal fissure
e) Herpes simplex virus infection

962. The following statement is **not** true about group A streptococcus infections:
a) A few of the ‘pharyngeal’ serotypes are associated with acute rheumatic fever.
b) None of the ‘skin’ strains are associated with acute rheumatic fever.
c) The rheumatogenic potential is solely depends upon serotypes.
d) The rheumatogenic potential is also a characteristic of specific strains.
e) More ‘skin’ strains are nephritogenic than that of ‘phayngeal’ strains.

963. A 3-year-old girl appears with a cervicofacial fistula. The draining material contains sulfur granules. She is HIV-positive. The preferred therapy is:
a) Erythromycin
b) Cefotaxime
c) Penicillin
d) Ceftriaxone
e) Azithromycin

964. The most common toxicity produced by streptomycin is:
a) Renal toxicity
b) Hepatic toxicity

c) Pancreatic toxicity
d) Vestibular damage
e) CNS toxicity

965. The most common toxicity produced by ethionamide is:
a) Hepatitis
b) Neuritis
c) Pancreatitis
d) Cystitis
e) Nephritis

966. The vision test is indicated in a patient who is using the following drug:
a) INH
b) Pyrazinamide
c) Ethionamide
d) Ethambutol
e) Streptomycin

967. An opthalmologic examination in a preterm infant reveals cotton ball exudates in retina. The preferred therapy is:
a) Acyclovir
b) Gentamicin
c) Ceftazidime
d) Amphotericin B
e) Penicillin

968. The lipid-complex formulations of amphotericin B are indicated in neonates with a compromised:
a) Hepatic function
b) Renal function
c) Splenic function
d) CNS function
e) Cardiac function

969. The following condition is **not** a risk factor for neonatal candidiasis:
a) Broad spectrum antibodies
b) Parental alimentation
c) Postmaturity
d) Abdominal surgery
e) Prolonged intravenous catheterization

970. A HIV-infected child develops persistent oral thrush. The preferred therapy is:
a) Amphotericin B
b) Ampicillin
c) Antiseptic solution
d) Forceful removal of oral thrush
e) Fluconazole

971. A newborn infant appears with a cluster of vesicular lesions on the scalp at the time of delivery. He was born by NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. The rest of the physical examination is unremarkable. The mother has no active genital lesions. The next step in management is:
a) Admit the infant in a well baby nursery.
b) Rupture the vesicle and send for a bacterial culture.
c) Rupture the vesicle, send a culture, and begin antibiotics therapy.
d) Begin acyclovir therapy after appropriate laboratory testing
e) Admit the infant in NICU and observe the infant. If the infant becomes symptomatic, beign amphotericin B therapy.

972. A small for gestational age newborn is diagnosed with a congenital CMV infection. The mother agreed to an experimental ganciclovir therapy. The most common complication of ganciclovir therapy is:
a) Thrombocytopenia
b) Ototoxicity

c) Nephrotoxicity
d) Eosinophilia
e) Neutropenia

973. The most serious ethical problem in health care in the USA may be:
a) Physicians make too many mistakes.
b) Pharmaceutical companies provide gifts to administrators to acquire hospital contracts.
c) Hospitals spend too much money for computer services rather than patient care.
d) The general public are not aware of their health problems.
e) All people do not have an equal access to health care.

974. A physician should oppose a pregnant woman's refusal of the recommended procedure in the following condition:
a) The risk to the pregnant women is substantial.
b) The procedure may or may not be effective.
c) The benefit to the fetus is negligible.
d) The risk to the mother is negligible.
e) The harm to the fetus is not certain.

975. A 15-year-old boy appears with a sexually transmitted disease. His parents are not aware of the problem. The appropriate therapy is:
a) The physician should call his parents before the appropriate therapy.
b) The physician should notify his sexual partner and ask her to come for therapy.
c) The physician should ask the social worker to notify his parents.
d) The physician should refuse treatment for his/her own moral believes.
e) The physician should treat the patient.

976. When a pediatrician is making a medical decision about the child, he or she should look into 'best interest' of the:
a) Physician
b) Mother
c) Patient
d) Father
e) Hospital

977. A child appears with a lack of weight gain, pruritis, irritability, limitation of motion, and swelling of the long bones. The physical examination reveals hepatomegaly and an increased intracranial pressure. The x-ray picture of the long bones reveal hyperostosis at the middle of the shafts. The next step in management is:
a) Give vitamin B12
b) Give vitamin A
c) Give vitamin D
d) Stop vitamin A
e) Stop vitamin B2

978. The early clinical symptoms of pellagra include all of the following **except**:
a) Weakness
b) Numbness
c) Dizziness
d) Burning sensations
e) Dermatitis

979. The usual clinical manifestations of a newborn with hypocalcemia are all of the following **except**:
a) Carpopedal spasm
b) Muscular twitching
c) Jitteriness
d) Tremor
e) Seizures

980. A 7-year-old boy appears wit a perioral paraesthesias, laryngospasms, carpopedal spasms, and seizure activities. The characteristic ECG finding is prolonged corrected QT intervals. The next step in management is:
a) Vitamin D2

b) L-thyroxine
c) Vitamin D3
d) Intramuscular magnesium
e) Intravenous calcium

981. The management of patients with a frostbite includes all of the following **except**:
a) Affected areas should be kept under water that has a temperature of 44°C.
b) Prazocin may be useful.
c) Keep the area open, dry, and sterile.
d) Analgesics are useful.
e) Maintenance of good nutrition is useful.

982. A child is going for a surgery. Her weight is 30 kg. The intraoperative fluid requirement for this child is:
a) 56 mL/hour
b) 65 mL/hour
c) 70 mL/hour
d) 76 mL/hour
e) 85 mL/hour

983. A child is going for an open heart surgery. The approximate third space loss for this child during surgery is:
a) 2-4 mL/kg/hour
b) 5-7 mL/kg/hour
c) 8-10 mL/kg/hour
d) 11-13 mL/kg/hour
e) 14-16 mL/kg/hour

984. A child is going for a hernia repair surgery. The approximate third space loss for this child during surgery is:
a) 1-2 mL/kg/hour
b) 3-5 mL/kg/hour
c) 6-7 mL/kg/hour
d) 8-9 mL/kg/hour
e) 10-11 mL/kg/hour

985. The insensible water loss for larger premature infants (2,000-2,500 grams) is approximately:
a) 0.1-0.3 mL/kg/hour
b) 0.4-0.5 mL/kg/hour
c) 0.6-0.7 mL/kg/hour
d) 0.8-1.0 mL/kg/hour
e) 1-2 mL/kg/hour

986. The insensible water loss for very premature infants (less than 1,000 grams) is approximately:
a) 0.5-1 mL/kg/hour
b) 1-2 mL/kg/hour
c) 2-3 mL/kg/hour
d) 4-5 mL/kg/hour
e) 6-7 mL/kg/hour

987. A 6-hour-old newborn is admitted for vomiting. The vomitus contains blood. The Apt test reveals a pink color. The most likely diagnosis is:
a) Swallowed maternal blood
b) Gastric ulcer
c) Necrotizing enterocolitis
d) Duodenal atresia
e) Hirschsprung disease

988. Vitamin K-dependent factors normally decrease in infants between:
a) 1-2 days of age
b) 2-7 days of age
c) 7-10 days of age

d) 11-14 days of age
e) 15-20 days of age

989. A pregnant mother received an unknown medication. The newborn developed a severe bleeding. The preferred initial therapy is:
a) Vitamin C
b) Heparin
c) Platelet transfusion
d) Vitamin K
e) IVIG

990. A 10-year-old girl appears with recurrent urticaria, arthritis, and limb pain. This condition is associated with all of the following **except**:
a) Elevated ESR
b) Recurrent fever
c) Hypogammaglobulinemia
d) Renal amyloidosis
e) Progressive nerve deafness

991. The inhalant insect allergy occurs most likely due to:
a) Protein induced IgM-mediated
b) Carbohydrate induced IgE-mediated
c) Lipid induced IgE-mediated
d) Lipid induced IgA-mediated
e) Protein induced IgE-mediated

992. The localized skin responses (e.g., pain, swelling, itching) secondary to biting insects are most likely due to:
a) Protein induced IgM-mediated
b) Lipid induced IgG-mediated
c) Carbohydrate induced IgA-mediated
d) Protein induced IgG-mediated
e) Vasoactive materials derived from saliva

993. All of the following are clinical manifestations of inhalant insect allergies **except**:
a) Asthma
b) Conjunctivitis
c) Urticaria
d) Seasonal rhinitis
e) Perennial rhinitis

994. The preferred therapy for patients with an inhalant allergy is:
a) Cold compress
b) Analgesic
c) Immunotherapy
d) Antihistamine
e) Avoidance of the insects

995. The therapies for patients with an insect bite may include all of the following **except**:
a) Cold compress
b) Oral analgesic
c) Oral antihistamine
d) Topical antiitching medication
e) Oral antibiotics

996. The cockroaches have all of the following allergic proteins **except**:
a) Proteases
b) Lipocalin
c) Troponin
d) Tropomyosin
e) Ptyalin

997. The red man syndrome occurs due to infusion of the following medication:
   a) Penicillin
   b) Vancomycin
   c) Rifampin
   d) Clindamycin
   e) Trimethoprim-sulfamethoxazole

998. A 12-year-old boy is receiving an anticonvulsant medication. Suddenly, he develops fever, maculopapular rash, generalized lymphadenopathy, and involvement of many visceral organs. The diagnosis of anticonvulsant hypersensitivity syndrome is made. This syndrome is most likely due to:
   a) Deficiency of glycogen synthetase
   b) Deficiency of glucose-6-phosphate dehydrogenase
   c) Deficiency of epoxide hydrolase
   d) Deficiency of epoxide synthetase
   e) Deficiency of glucuronyl transferase

999. A child develops hemorrhagic necrosis of the small intestine secondary to Clostridium perfringens infection. The following toxin is responsible for this clinical manifestation:
   a) Alpha toxin
   b) Beta toxin
   c) Iota toxin
   d) Hemolysin
   e) Epsilon toxin

1000. The following toxin released by Clostridium perfringens causes hemolysis, platelet lysis, thrombocytopenia, increased capillary permeability, and hepatotoxicity:
   a) Epsilon toxin
   b) Enterotoxin
   c) Alpha toxin
   d) Iota toxin
   e) Beta toxin

1001. A child who has diabetes mellitus appears with an abdominal distension, vomiting, diarrhea, and bloody stools. He ate undercooked pork chitterlings. The most likely organism causing this manifestation is:
   a) Shigella
   b) Salmonella
   c) E. coli
   d) Rotavirus
   e) Clostridium perfringens

1002. A full term LGA newborn is admitted in NICU with a moderate respiratory distress and cyanosis. The infant was born by a forcep-assisted vaginal delivery. The Apgar scores are 8 and 8 at 1 and 5 minutes respectively. The physical examination reveals irregular breathing and mildly diminished breast sound on the right chest. The chest x-ray reveals an elevation of the right diaphragm. The preferred diagnostic test for this condition is:
   a) Lateral chest x-ray
   b) MRI
   c) CT scan
   d) ABG
   e) Ultrasonography

1003. A full term newborn is admitted in NICU with a severe perinatal asphyxia. The infant was placed on mechanical ventilator. At 2 hours of age, the infant develops seizure activities. The preferred therapy for a seizure in newborns is:
   a) Phenytoin
   b) Paraldehyde
   c) Carbamazepin
   d) Intravenous glucose
   e) Phenobarbital

1004. All of the following conditions indicate severe asphyxia of newborns **except**:
- a) Seizure
- b) pH less than 7.0
- c) Hypotonia
- d) Decreased level of consciousness
- e) A 5-minute Apgar score is 4

1005. The preferred diagnostic study for cerebral infarctions in newborn is:
- a) Ultrasonography
- b) Cerebral angiogram
- c) Spinal tap
- d) Contrast head CT scan
- e) Ventricular tap

1006. Liddle syndrome includes all of the following features except:
- a) Hypotension
- b) Hypokalemia
- c) Hypernatremia
- d) Metabolic alkalosis
- e) Low serum level of aldosterone

1007. Most infants reduce the volume and the frequency of breast feeding between:
- a) 3-6 months of age
- b) 6-12 months of age
- c) 12-15 months of age
- d) 15-18 months of age
- e) 18-24 months of age

1008. All of the following parameters indicate the **maximum** recommended nutrients in infants formulas **except**:
- a) Iron 1.65 mg/100 kcal
- b) Fat 6.4 grams/100 kcal
- c) Protein 3.4 grams/100 kcal
- d) Carbohydrate 9 grams/100 kcal
- e) Calcium 140 mg/100 kcal

1009. All of the following parameters indicate the **minimum** recommended nutrients in infant formulas **except**:
- a) Iron 0.2 mg/100 kcal
- b) Fat 1.0 grams/100 kcal
- c) Protein 1.7 grams/100 kcal
- d) Carbohydrate 9 grams/100 kcal
- e) Calcium 50 mg/100 kcal

1010. The maximum recommended calories in infant formulas should be:
- a) 63 kcal/dL
- b) 71 kcal/dL
- c) 80 kcal/dL
- d) 85 kcal/dL
- e) 90 kcal/dL

## ANSWERS

| No. | | **Correct Answer** |
|---|---|---|
| 1. | (e) | Trachoma. It is an eye infection due to chlamydia. |
| 2. | (c) | Flexion and extension laternal neck x–ray can detect atlantoaxial instability due to odontoid hypoplasia and joint laxity. |
| 3. | (b) | 3–4 feedings per day |
| 4. | (a) | Chromosome 7q 11.23 |
| 5. | (b) | Macrophage activation syndrome is a rare complication of systemic JRA. |
| 6. | (d) | Before birth with the planning and confirmation of pregnancy. |
| 7. | (e) | Ecthyma gangrenosum |
| 8. | (a) | Benzodiazepines (e.g., lorazepam or diazepam) have a short half–life. Therefore, it must be followed with another long–acting agent (e.g., phenobarbital or phenytoin). |
| 9. | (c) | 2 years for all children. BMI is used to measure obesity. |
| 10. | (c) | Emergency court order is indicated. |
| 11. | (b) | Autosomal dominant. HDR syndrome includes hyperparathyroidism, nerve deafness, and renal dysplasia. |
| 12. | (a) | Loss of deep tendon reflexes is followed by decreased lower extremity vibratory and propioceptive senses and cerebellar signs (e.g., ataxia, spastic gait, dysmetria). |
| 13. | (e) | Only five–times washed (in 200–ml volumes) normal donor RBCs or blood from other IgA–deficient person. |
| 14. | (e) | HSV causes Kaposi varicelliform eruption or eczema herpeticum. |
| 15. | (e) | Urine specimens should be delivered to the laboratory immediately because gram–negative enteric pathogens (e.g., E. coli) have doubling times of 20–30 minutes. |
| 16. | (e) | The last dose of hepatitis B vaccine should not be given before age 6 months. |
| 17. | (a) | Isolation of M. tuberculosis from sputum or gastric aspirate is the best method to diagnose pulmonary TB. |
| 18. | (a) | **Please remember** negative cultures never exclude the diagnosis of TB. If the child has history of exposure to an adult with infectious TB, has positive PPD and chest x–ray results, the diagnosis of TB should be made. |
| 19. | (e) | C1q deficiency |
| 20. | (a) | High–dose of intravenous methylprednisolone within 8 hours of spinal cord injury improves the motor outcome. |
| 21. | (c) | Respiratory alkalosis decreases intracellular pH, stimulates glycolysis, and increases utilization of phosphorus which results in hypophosphatemia. |
| 22. | (e) | Large amounts of porphyrins in urine cause pink to brown staining in diapers. |
| 23. | (a) | 0.5 mg/kg/day. |
| 24. | (e) | Neonatal RBCs have decreased deformability and filterability. |
| 25. | (e) | Weight–for–height |
| 26. | (a) | Weight–for–height. All other parameters are below the normal curve. Decreased head growth can cause delayed cognitive development. |
| 27. | (d) | Aortic ultrasonography |
| 28. | (c) | Chlamydia trachomatis and N. gonorrhoeae are the most common organisms causing cervicitis. |
| 29. | (b) | Selective absence of IgA, IgG, IgM and IgE levels are usually decreased. |
| 30. | (a) | Vocal cord myopathy |
| 31. | (a) | Local immunosuppression. |
| 32. | (e) | IHPS can occur in infants less than 6 weeks of age treated with orally administered erythromycin. |
| 33. | (a) | Enterovirus 70 and coxsackievirus A 24 are responsible for epidemics of acute hemorrhagic conjuctivitis. |
| 34. | (d) | Anti–Ro IgG antibodies |
| 35. | (e) | Aspirin |
| 36. | (c) | Hyperinsulinemia |
| 37. | (b) | Turner syndrome |

38. (e) A careful screening for Y chromosome material is indicated in a patient with Turner syndrome who has only one X chromosome.
39. (e) The PICU staff should encourage all families to express their concerns and try to understand their positions and try to accomodate as much as possible.
40. (a) Chromosomal disorder (22%), genetic syndrome (21%), and unknown (21%).
41. (e) Unknown (more than 50% of cases)
42. (a) Excessive fetal movements
43. (d) Gastroenteritis
44. (b) Hypernatremia. Baking soda contains sodium bicarbonate resulting in hypernatremia and metabolic alkalosis.
45. (a) Iatrogenic due to either decreased fluid administration or excessive sodium administration (e.g., use of sodium bicarbonate for metabolic acidosis, wrong sodium calculation in severe preterm newborns)
46. (a) Movement of water from serum into brain cells is due to rapid decrease of serum sodium resulting in cerebral edema and seizure activities.
47. (a) Idiogenic osmoles inside the brain cells draw water from serum into brain cells. Brain cells produce idiogenic osmoles when hypernatremia develops in order to increase the brain cell intracellular osmolality, to prevent the loss of brain cell water, and try to equalize the osmolality within brain cells and serum.
48. (a) Less than 12 mEq/L/day, at a rate of 0.5 mEq/L/hour.
49. (e) These are normal stools for a breast–fed newborn. Reassurance is the answer.
50. (e) Reassurance only. Lack of interest in food is a temporary phenomenon and it is noted in second year of life. Force feeding causes more problems.
51. (e) Hungry bone syndrome occurs after parathyroidectomy for hyperparathyroidism. This syndrome causes hypocalcemia, hypophosphatemia, and hypomagnesemia. Serum calcium, phosphorus, and magnesium move from the serum into bone due to lack of osteoclastic activities while osteoblastic activities are normal.
52. (a) Hospital administrator
53. (e) Family
54. (d) Liver enzymes
55. (b) X–linked
56. (e) Mutation analysis. VLCFA (very long chain fatty acids) level is normal.
57. (a) Elevated levels of VLCFA in plasma, RBCs, and cultured skin fibroblast are diagnostic studies.
58. (a) Elevated VLCFA levels in cultured amniocytes or chorionic villus cells and by mutation analysis
59. (c) Food allergic reaction
60. (a) L. monocytogenes is resistant to cephalosporins including third–generation.
61. (a) Ampicillin
62. (e) Ampicillin and aminoglycoside
63. (e) Diarrhea
64. (b) Increased excretion of acid by the kidney.
65. (a) Hyperactivity that leads to misdiagnosis of attention deficit disorder. Other manifestations of ALD include seizures, visual isturbances, difficulty in using telephone, impaired spatial orientation, mild hyperpigmentation, impaired cortisol response to ACTH stimulation, ataxia, and strabismus.
66. (c) Fetal infection causes fetal tachycardia.
67. (e) Maternal use of beta–sympathomimetic agent or atropine causes fetal tachycardia.
68. (d) Crown–rump length
69. (b) Biparietal diameter
70. (e) Abdominal circumference and femoral length
71. (a) Intravascular catheter
72. (a) Handwashing
73. (a) Use of gloves reduces need for handwashing
74. (e) Ionized calcium
75. (d) Hypercalcemia

76. (a) Supravalvular aortic stenosis is present in about one third of patients.
77. (a) Supravalvular aortic stenosis is the most common cardiovascular anomaly in Williams syndrome.
78. (e) Unknown
79. (b) Williams syndrome patient has “cocktail party” personality.
80. (e) Williams syndrome
81. (b) GAD (glutamic acid decarboxylase). The patient has pyridoxine dependency with seizure.
82. (a) GABA deficiency in brain occurs due to GAD (glutamic acid decarboxylase) enzyme deficiency.
83. (e) Vitamin $B_6$ (10–100 mg/kg)
84. (d) 500 mrad
85. (d) 10,000 mrad
86. (d) 20,000–50,000 mrad
87. (c) Formula–fed infant receives more than enough vitamin K.
88. (c) Clinical staging 3. Decorticate posture means flexion of upper extremities and extension of lower extremities. The patient is comatose but occasionally responds to commands.
89. (a) Clinical staging 1. The patient is only lethargic.
90. (e) Clinical staging 5. The patient is comatose and has no response to pain.
91. (b) Clinical staging 2. The patient is combative.
92. (d) Clinical staging 4. Decerebrate posture means extension of both upper and lower extremities. The patient is comatose but responds to pain.
93. (e) Distal ileum
94. (d) Prematurity. Breast milk protects from NEC. All other choices causes NEC.
95. (a) No pathogen. All other organisms can be identified in NEC.
96. (e) Intestinal ischemia, oral formula feedings (metabolic substrate), and pathogenic organisms.
97. (d) Cardiovascular and musculoskeletal birth defects may occur in fetus.
98. (a) Peak flow morning–to–afternoon variation 20% or more and the items (d, e) are the main criteria consistent in asthma patients.
99. (e) Latex and intravenous medications(e.g., antibiotics, immunoglobulin, radiocontrast materials). Food allergy is the most common cause of anaphylaxis outside the hospital.
100. (d) 4 hours. Over 90% of biphasic reactions (i.e., anaphylactic symptoms recur after apparent improvement) occur within 4 hours.
101. (a) Streptococcus pyogenes.
102. (e) Desensitization followed by penicillin
103. (a) The concentration 0.018 microgram/mL (0.03 U/mL) of penicillin is needed to kill all spirochetes in serum and CSF.
104. (d) CSF glucose level is normal.
105. (a) Parvovirus B19
106. (e) PPGSS sydrome
107. (e) Encephalitis and glomerulonephritis are the serious complications of tissue nematoda Loa Loa infection.
108. (c) The blood smears should be collected between 10 AM and 2 PM.
109. (a) Propofol should **not** be considered as a “sedation” agent. **Propofol is a general anesthetic agent.** It decreases airway reflexes, respiration, and hemodynamic function.
110. (e) Intracranial hemorrhage does not occur.
111. (e) Short and broad hands are present in a patient with Down syndrome. Gastrointestinal abnormalities may be present.
112. (e) SCID
113. (a) ECPs should be prescribed prior to the need and should be available to women.
114. (e) A continuing contraception is indicated; the physician also explore the situation resulting in an unprotected sexual intercourse.
115. (c) Presence of anti–PR3 ANCAs is a diagnostic finding. The others specific diagnostic tests are pulmonary, renal, or sinus biopsy that reveals necrotizing granulomatous angitis.
116. (a) Previous pregnancy with a positive GBS is not an indication for IAP.

117. (a) Infant can be discharged after 24 hours if other discharge criteria have been met and a person should be able to observe the baby at home properly. If any of these conditions is not met, infant should stay in the hospital for at least 48 hours and until criteria for discharge are achieved. If laboratory results and clinical course are benign, infant should be discharged as early as 48 hours. Sepsis work up is not indicated.
118. (b) 10 days
119. (b) 2–3 weeks
120. (d) 4 weeks
121. (d) III
122. (d) III
123. (c) 20–30 hours
124. (a) TV
125. (c) After 24 months
126. (d) 10%; food insecurity without hunger is 7%; food insecurity with hunger is 3%.
127. (e) Waterless hand hygiene products
128. (a) Waterless hand hygiene products do not remove dirt or debris.
129. (e) ICU
130. (e) Azithromycin
131. (c) Corticosteroids
132. (c) Rash. In the beginning, rash is maculopapular that initially blanches on pressure and progress to petechiae or purpura. The palpable purpura that evolve from red to purple to rusty brown and subsequently fade.
133. (a) Air/barium enema should be performed for intussuception. Air/barium enema is both diagnostic and therapentic procedures for intussuception.
134. (a) H. parainfluenzae
135. (c) The local cooling and elevation of the scrotum are useful in scrotal edema.
136. (a) Ceftazidime and gentamicin

137 (b) Ceftazidime

138. (d) Intravenous ceftazidime and gentamicin plus intraventricular or intrathecal gentamicin (1–2 mg total once daily) may be effective in pseudomonas meningitis. However, this therapy is not recommended for a routine use.
139. (b) To maintain pool water at a pH 7.2–7.8 and free chlorine concentration at 70.5 mg/L
140. (e) Streptococcus pneumoniae (Pneumococcus)
141. (a) Serotypes 4 and 18 C are sensitive to penicillin; serotypes 6B, 9V, 14, 19F, and 23 F are resistant to penicillin.
142. (e) Vancomycin is the drug of choice until the susceptibilities to other antibiotics are known.
143. (d) Vaccine decreases the complications of otitis media (e. g., tympanostomy tube placement).
144. (c) Penicillin prophylaxis is recommended for at least 2 years after splenectomy or up to 5 years of age in children who received all recommended pneumococcal vaccines and did not suffer from an invasive pneumococcal disease. Oral antibiotic prophylaxis should be taken very seriously.
145. (e) A persistent urachus (urachal cyst) is associated with bladder outlet obstruction and is due to failure of the closer of allantoic duct.
146. (a) Redness of the face, hands, and feet gives the false impression about the infant's sickness. Neonatal cold injury also causes poor feeding, hypoglycemia, metabolic acidosis, rhinitis, and hypotension.
147. (c) Hyperreflexia is absent.
148. (e) Only supportive care and respiratory support are indicated. Intravenous calcium and diuretics reduce magnesium levels. Exchange transfusion is rarely necessary for rapid removal of magnesium ion from the blood.
149. (e) Thrombocytosis is absent. Other complications include hemodynamic instability, airway obstruction, thrombocytopenia, vaso–occlusive disease, and graft versus host disease (GVHD)
150. (e) CNS injury is not a contraindication of organ donations. Other contraindications are diabetes mellitus and severe hypertension. Some centers accept patients with bacterial sepsis or meningitis who received 1–2 days of antibiotics and the repeat cultures are negative.
151. (a) Renal biopsy is not indicated because the child is an stable condition and he has no signs of rejection. The recorded blood pressure is at levels 20–30% higher than normal can occur especially when a small child received an adult kidney.

152. (a) P. aeruginosa. However, the most common organism causing nonpersistent tube otorrhea is S. pneumoniae.
153. (d) Removal of the tube is indicated when the conventional outpatient management fails or patient should be admitted in hospital for intravenous antibiotic prior to removal of the tube.
154. (d) Coarsely granular pattern with irregular aeration indicates aspiration of amniotic fluid in utero due to fetal distress. **Occasionally, pleural fluid is present in TTNB**.
155. (a) Chronic intrauterine hypoxia and hyperviscosity responsible for long–term adverse outcome such as speech deficits, school problems, decreased IQ, abnormal fine motor movements, and other neurologic abnormalities in patients with polycythemia. It is **not** clear whether partial exchange transfusion improves the long–term outcome.
156. (a) Increased gonadotropin secretion is due to increased intracranial pressure (ICP) in patients with shunted hydrocephalus or meningomyelocele.
157. (b) V–P shunt infection rate is less than 5%.
158. (a) Weighing the infant before and after every nursing to determine the adequacy of milk is not indicated.
159. (a) The first drug of choice is intravenous calcium. Calcium prevents cardiac arrythmias immediately. However, calcium should be given slowly over 30 minutes in a patient who is receiving digitalis because calcium may cause arrythmias.
160. (a) Sodium 55 mEq/L, potassium 25 mEq/L, bicarbonate 15 mEq/L
161. (b) D5 ¼ Normal saline +15 mEq/L bicarbonate + 25 mEq/L KcL
162. (b) Sodium 60 mEq/L, potassium 10mEq/L, chloride 90 mEq/L
163. (b) D5 ½ NS + 10 mEq/L KcL
164. (d) Prolonged expiratory time does not increase the MAP. **Prolonged inspiratory time** without changing the rate causes reversal of inspiratory–expiratory ratio (I:E) resulting in an increased of MAP.
165. (a) A pregnant mother with hyperphenylalaninemia should be on phenylalanine–restricted diet **before and during** pregnancy. Her phenylalanine levels should be maintained below 6 mg/dL (360 micro M). The normal phenylalanine plasma level is less than 2 mg/dL and in classic PKU, the level is above 20 mg/dL
166. (c) The infant develops phenylalanine deficiency due to over treatment. The patient should receive phenylalanine and tyrosine. Tyrosine is also an essential amino acid in this disorder.
167. (a) Autosomal recessive
168. (e) The deficiency of phenylalanine hydroxylase or its cofactore tetrahydrobiopterin causes accumulation of phenylalanine in CNS and body fluids.
169. (a) The CNS (central nervous system) is affected due to an elevation of phenylalanine levels in brain tissue. Phenylalanine also interferes with the transport of tyrosine and tryptophan into the brain.
170. (a) Avoidance of high PIP and mean ventilatory pressure can prevent the development of PIE.
171. (a) Selective intubation and ventilation of the uninvolved lung and bronchus.
172. (e) Alveolar
173. (e) Increased PIP does not stop pulmonary hemorrhage. High frequency ventilation (HFV) is useful to stop pulmonary hemorrhage in some cases.
174. (a) RhoGAM is administered at 28–30 weeks of gestational age and at birth (40 weeks).
175. (e) Chronic diarrhea is a clinical manifestation in T–cell deficiency.
176. (a) The clinical manifestations appear after 5–6 months of age due to protective effects of maternal antibodies.
177. (e) Serum immunoglobulin deficiency can cause recurrent ear infections (e.g., 3 or more episodes within 6 months, or 4 or more episodes within 12 months).
178. (c) The patients with IgA deficiency can develop antibody against the minute amounts of IgA present in IVIG and can produce anaphylactic reaction.
179. (b) S. epidermidis
180. (b) S. epidermidis. This organism also causes bacteremia, endocarditis, and urinary tract infections with a urinary catheter inside.
181. (a) The most common organism in recurrent otitis media is Streptococcus pneumoniae.
182. (a) S. epidermidis infections in full term infants are most likely contaminant.
183. (a) Penicillin–binding protein (PB2A) is relatively insensitive to antibiotics containing a beta–lactam ring (e.g., methicillin)
184. (c) The patient who stayed next to the MRSA patient does not need prophylactic antibiotics.

185. (e) Tyrosinemia also produce rancid butter smell in the urine. Hypermethionemia also produce boiled cabbage smell in the urine.
186. (e) Multiple carboxylase deficiency.
187. (a) Glutaric acidemic (type II) and isovaleric acidemia produce sweaty feet and acrid odor.
188. (a) Material toxemia protects from white matter disorders. Maternal and placental infections, and other cytokine promoting factors can also cause WMD.
189. (e) Hypercarbia can cause WMD in preterm infants.
190. (c) 6–8 mg/kg/day.
191. (a) Sepsis causes direct hyperbilirubinemia
192. (e) Spherocytosis causes indirect hyperbilirubinemia.
193. (a) UTI or sepsis causes direct hyperbilirubinemia after the 3rd day and within the 1st week of life.
194. (e) G6PD deficiency causes indirect hyperbilirubinemia and negative Coombs positive.
195. (a) Giant cell hepatitis causes direct hyperbilirubinemia and no polycythemia.
196. (b) Nonculture gonococcal tests are **not** reliable in children because false–positive results can occur.
197. (a) Amoxicillin is used in children younger than 8 years of age.
198. (a) Doxycycline is used in children 8 years of age or older than that.
199. (e) Doxycycline can cause dermatitis in sun–exposed areas.
200. (e) Cefuroxime is the preferred therapy for children who cannot take amoxicillin and doxycycline.
201. (c) 6 months of age. This current recommendation is based on **nutritional concept** rather than maturation of the swallowing process.
202. (c) 4 months of age
203. (a) 1 month of age
204. (b) 12 weeks of gestation
205. (a) Supine position reduces the suffocation in infants.
206. (e) Cystic fibrosis
207. (e) Cystic fibrosis
208. (a) Asthma, aspirin sensitivity, and nasal polyposis are the Samter triad.
209. (e) Pulmonary hypertension may develop due to chronic hypoxia.
210. (a) Physical examination and Cobb technique
211. (a) S. aureus and group A Streptococcus are the most common organisms.
212. (d) DNA analysis
213. (e) Reassurance. Breast asymmetry may persist beyond the age of 18 years and is common between Tanner stage 2 and 4.
214. (a) Macrostomia
215. (e) Crigler–Najjar syndrome (type I).
216. (a) Autosomal recessive
217. (b) Autosomal dominant
218. (b) Crigler–Najjar syndrome (type II)
219. (c) Phenobarbital; calcium phosphate, cholestyramine, or agar can be used to reduce enterohepatic circulation because those bind with photobilirubin products.
220. (e) Above 35 mg/dL
221. (b) Tricuspid regurgitation
222. (e) Noonan syndrome

223 (a) Noonan syndrome

224. (a) Aortic stenosis is absent. The cardiac defect in Noonan syndrome is pulmonic valvular stenosis, hypertrophic cardiomyopathy, or atrial septal defect.
225. (b) Type II diabetes; acanthosis nigricans is a sign of insulin resistance and relative hyperinsulinemia.
226. (e) The middle cortical area is one of the most vulnerable areas.
227. (a) Walker–Warburg syndrome and muscle–eye–brain disease of Santavuori.

228. (a) Physiotherapy is useless in treating patients with facioscapulohumeral muscular dystrophy (Landouzy–Dejerine disease.)
229. (b) Congenital central hypoventilation syndrome (Ondine curse).
230. (e) Pharmacologic respiratory stimulation (e.g., aminophylline or theophylline) therapy is **not** effective.
231. (a) CNS (central nervous system) defects
232. (e) Oropharyngeal incoordination is noted in 48% of cases with recurrent pneumonia.
233. (e) A modified barium swallow with video fluroscopy is the gold standard for evaluation of the swallowing mechanism.
234. (a) Diarrhea
235. (b) Constipation
236. (a) Rebound hypertension
237. (a) Antihypertensive medication
238. (e) Balloon angioplasty. Intravascular stents are commonly used.
239. (e) Endocardial fibroelastosis
240. (e) Heart transplantation. Initial therapy includes prevention of respiratory infections and treatment of congestive heart failure.
241. (e) Normal platelet counts and functions. However, platelet transfusions are indicated in all pediatric age groups with platelet dysfunction, bleeding, or invasive procedures regardless of platelet count.
242. (e) Normal platelet counts and functions
243. (a) FFP should not be used to prevent IVH in premature infants. FFP should not be used in partial exchange transfusion for polycythemia. FFP should not be used as a suspending agent before small–volume RBCs transfusion because it does not offer any additional benefit over sterile solutions.
244. (a) FFP is not recommended for factor VII deficiency, hemophilia A or B. Factor XIII and fibrinogen deficiencies are treated with cryoprecipitate. FFP transfusions are indicated in severe clotting factor deficiency and bleeding or invasive procedures.
245. (a) Surgical hypoparathyroidism can cause tetany and cataracts.
246. (e) Abnormal development of the base of the skull causes increased forces on the dura resulting in disruption of normal cranial suture development.
247. (e) Aqueductal stenosis causes hydrocephalus and wide separation of sutures.
248. (a) Mutations of fibroblast growth factor receptors are associated with Pfeiffer, Apert, and Crouzon syndromes.
249. (c) Clonidine toxicity; clonidine is used in ADHD and tic syndromes.
250. (a) Gastric decontamination is not very useful.
251. (a) Hypotension can be avoided by slowing the intravenous infusion rate of deferoxamine.
252. (a) Atropine is an antidote for organophosphate and carbamate poisoning.
253. (c) Methylene blue is an antidote for methemoglobinemia.
254. (e) Pralidoxime is an antidote for organophosphate poisoning.
255. (e) N–Acetylcysteine is an antidote for acetaminophen toxicity.
256. (a) Physostigmine is an antidote for anticholinergic agents.
257. (a) Dimercaptosuccinic acid is an antidote for lead and probably mercury, arsenic, and other metallic poisoning. EDTA and calcium are antidotes for lead, manganese, nickel, zinc, and probably chromium poisoning.
258. (a) Pyridoxine (vitamin $B_6$) is an antidote for INH and Gyromitra mushroom poisoning.
259. (b) Flumazenil is the antidote for benzodiazepines toxicity.
260. (b) Digoxin–specific Fab antibodies (Digiband) are the specific antibodies for all digitalis glycosides.
261. (e) Naloxone (Narcan) is an antidote for narcotics (e.g., morphine) poisoning.
262. (d) Children should not run away from an unaccompanied dog. Children should allow a dog to see and sniff them before touching that dog.
263. (e) Streptobacillus moniliformis is the most common organism in rat–bite fever.
264. (a) Spirillum minus is responsible for sodoku. Sodoku is caused by rat bites. Sodoku is characterized by fever, rash, lymphadenopathy, and ulcerative lesions at the wound site occuring days to weeks after the primary rat–bite wound has healed.
265. (a) Mixed anaerobes (50% of cases), S. aureus (20–30%), P. multocida (20–30%), Staphylococcus intermedius (25%), and C. canimorsus are common organisms in dog bite wound.
266. (a) Pasteurella multocida is the most common organism in cat bite wound infection.

267. (a) Anaerobic bacteria (50%) and Eikenella (25%) are responsible for clenched first injury infections.

268. (e) Streptobacillus moniliformis is not responsible for human bite wound infections. Beta– lactamase producing aerobes are also responsible for producing human bite wound infections.

269. (a) Lower serum $T_4$, higher serum $T_3$, and moderately higher serum TSH; higher serum $T_3$ levels are due to preferential secretion of $T_3$ by the thyroid. Answer (b) represents primary hypothyroidism. Answer (c) is a normal finding. Answer (d) represents primary hyperthyroidism or Graves disease. Answer (e) represents patients with elevated thyroxine-binding globulin (TBG) levels or familial dysalbuminemic hyperthyroxinemia.

270. (e) Graves disease or primary hyperthyroidism

271. (a) Propylithiouracil (PTU) is the preferred medicine during pregnancy and lactation. Unlike methimazole, PTU is highly protein–bound. Therefore, PTU does not cross the placenta well and does not easily enter into breast milk.

272. (a) Methimazole is 10 times more potent than propylthiouracil, has longer half–life (6–8 hours versus 0.5 hour), and is given once daily. PTU is given three times daily.

273. (c) Thyrotropin receptor–stimulating antibody (TRSAb) causes congenital hyperthyroidism.

274. (a) Respiratory depression

275. (e) Hyperthyroidism. The infant is usually lethargic in sepsis, group–B streptococcus (GBS) bacteremia and meningitis. GBS colonization in a mother rarely causes infection in newborns.

276. (e) Propranolol and PTU are used in congenital hyperthyroidism.

277. (e) Thyroidectomy is **not** indicated. Digitalis can be used in patients with cardiac failure.

278. (b) Barbiturates (e.g., phenobarbital) bind to beta–subunit of GABA (gamma–amino butyric acid).

279. (a) Benzodiazepines (e.g., diazepam, lorazepam, clonazepam, nitrazepam, clobazam) bind to alpha-subunit of GABA.

280. (a) Vigabatrin binds to GABA–transaminase.

281. (a) Tiagabine blocks uptake of GABA.

282. (a) Carbamazepine acts similar to phenytoin.

283. (e) Phenytoin acts similar to carbamazepine.

284. (b) Ethosuximide blocks calcium channels associated with thalamocortical pathway.

285. (a) Valproic acid

286. (a) Topiramate

287. (a) Lamotrigine

288. (a) Gabapentin binds with neuronal membrane (glutamate synapses) and increases GABA turnover. Answer (b) is the action of Tiagabine. Answer (c) is the action of Vigbatrin. Answer (d) is the action of benzodiazepines. Answer (e) is the action of barbiturates.

289. (c) **Infantile spasms** occur between the ages of 4 to 8 months. This child has mixed type of cryptogenic infantile spasms. Three types are flexor spasms (i.e., flexion of the neck, arms, and legs onto the trunk), extensor spasms (i.e., extension of the trunk and extremities, least common type), and mixed type (most common type). Infantile spasms are two groups : cryptogenic and symptomatic. The cryptogenic type (10–20% of cases) has a normal delivery, development, neurologic examination, head CT or MRI findings, and good prognosis. The symptomatic type (80–90% of cases) is directly related to severe prenatal, perinatal, and postnatal factors such as hypoxic–ischemic encephalopathy, periventricular leukomalacia, congenital infectors, inborn errors of metabolism, prematurity, and tuberous sclerosis. The symptomatic type has an 80–90% risk of mental retardation. Hypsarrythmia is a chaotic pattern of high–voltage, bilaterally asynchronous, slow–wave activities. Hypsarrythmia is a characteristic EEG finding in infantile spasms.

290. (b) Prednisone is equally effective as ACTH.

291. (a) ACTH also causes hyperglycemia and electrolyte abnormalities.

292. (a) Carbamazepine may cause hyponatremia.

293. (b) Carbamazepine–10, 11– epoxide is an active metabolite of carbamazepine. This metabolite can cause toxicity despite normal carbamazepine levels, especially when valproic acid is added with carbamazepine.

294. (e) Valproic acid **decreases serum carnitine levels** by inhibiting plasmalemmal carnitine uptake. Therefore, L–carnitine supplementation is indicated to prevent hepatotoxicities.

295. (d) Carnitine deficiency causes lethargy, weakness, and hypotonia.

296. (a) Valproic acid should **not** be used with ketogenic diet because of increased hepatotoxicity.

297. (e) Toe walking (equinus gait) is a normal finding up to 3 years of age.

298. (e) Unilateral developmental dysplasia of the hip (DDH); cerebral hemiplegia can cause unilateral toe walking. Answers (a), (b), (c), (d) and congenital tendo–Achilles contractures can cause bilateral toe walking.

299. (d) Hip; developmental dysplasia of the hip (DDH) should be ruled out in patients with congenital muscular torticollis and/or metatarsus adductus.

300. (a) The Barlow test is the best in newborns with DDH. The Ortolani test is the best in patients with DDH at 1–2 months of age. Answers (c) and (d) are also noted in DDH. Answers (e) is the normal hip position.

   **The Barlow test**: **to dislocate an unstable hip** by stabilizing the pelvis in one hand, and then flexing and adducting the opposite hip, and applying a posterior force.

   **The Ortolani test**: **to reduce a dislocated hip** by flexing and abducting the thigh and the femoral head is pushed anteriorly into the acetabulum.

301. (e) Hip clicks are not pathologic. Therefore, a dislocated hip joint is not the correct answer.

302. (e) Dynamic ultrasonography

303. (e) X–ray of the pelvis; line measurements help to determine the position of the femoral head and the acetabulum (i.e., acetabular index, quadrant position, the center edge angle of Wiberg, and Shenton's line). MRI, CT–scan, and arthrography are used only in difficult cases.

304. (e) Flexion and abduction position of the hip can be maintained by **Pavlik harness, Frejka splint**, or **any abduction orthoses**.

305. (a) Pavlik harness

306. (a) Closed surgical reduction; if there is significant instability, an open surgical reduction is indicated.

307. (a) Open surgical reduction

308. (e) Avascular necrosis of the CFE. Answer (a), (b), (c), and (d) are also complications of DDH.

309. (e) Analyze the amount of drug in the breast milk.

310. (e) The pharmacology service is useful in obtaining the drug distribution in breast milk and drug absorption in gastrointestinal tract of infants.

311. (a) Vaginal septum

312. (a) Petrolatum or zinc oxide ointment should be applied locally for 1–2 months to prevent the recurrence of labial adhesion.

313. (a) Patients with liver disease are usually PiZZ and have serum alpha–1–antitrypsin deficiency (less than 2 mg/mL). A fewer than 20% of PiZZ neonates develop neonatal cholestatic jaundice.

314. (e) Liver biopsy confirmed the diagnosis of alpha–1 antitrypsin deficiency.

315. (c) Liver transplantation is curative therapy.

316. (e) Excision with CO$_2$ laser

317. (b) Intrauterine transmission

318. (c) HPV types 6 and 11 are most commonly associated with laryngeal disease.

319. (e) Carbon dioxide and oxygen are not irritants; particulate matters are also irritants.

320. (c) 2–6%; the same incidence if one parent was affected.

321. (c) 20–30%; the same incidence if two first–degree relatives were affected.

322. (e) Radial pulse may be diminished on the side of Blalock–Taussig shunt.

323. (e) **Intravenous methoxamine or phenylephrine** improves right ventricular flow, decreases right–to–left shunt, and improves the cyanosis and symptoms. **Intravenous propranolol** (beta–adrenergie blocker) is also used.

324. (e) Open heart surgery and total corrections are indicated. The modified Blalock–Taussig shunt (i.e, a Gore–Tex conduit anastomosed side to side from the subclavian artery to the homolateral branch of pulmonary artery) can be performed to improve pulmonary circulation.

325. (b) Between 4 and 12 months of age

326. (e) Sodium bicarbonate therapy is not indicated. Hydration is useful to prevent hemoconcentration. Iron therapy prevents the paroxysmal dyspneic attacks in infancy and early childhood. Propranolol decreases the hypercyanotic spells. Oxygen is given when indicated.

327. (e) 40–60 days.

328. (a) Transcobalamine II (TC–II) deficiency causes megaloblastic anemia because TC–II is the principal transport protein for vitamin B$_{12}$. Other causes of impaired absorption of vitamin B$_{12}$ are regional enteritis, necrotizing enterocolitis, and diverticula of small intestine.

329. (e) Parenteral therapy with vitamin $B_{12}$ monthly corrects the vitamin $B_{12}$ deficiency. Imersland–Grasbeck syndrome is due to absence or defect of the receptor intrinsic factor (1F) $B_{12}$ in the terminal ileum resulting in impaired vitamin $B_{12}$ absorption with or without proteinuria.

330. (d) Hypersplenism occurs in **sickle cell disease.** Other complications of **sickle cell trait** are hyposthenuria (i.e., the secretion of urine with low specific gravity due to inability of the kidney to concentrate the urine normally), bacteriuria, and renal medullary carcinoma.

331. (d) G6PD (glucose–6–phosphate dehydrogenase) deficiency with hemolytic jaundice. Heinz bodies (precipitated hemoglobin) are present in G6PD deficiency. Heinz bodies are **not** visible on the Wright–stained blood film.

332. (c) G6PD deficiency and hemolysis. The higher doses of aspirin (60–100 mg/kg/day) can cause hemolysis in G6PD deficient patients. G6PD A– variety patients do not develop hemolysis in usual doses of aspirin and Trimethoprim-sulfamethoxazole.

333. (b) G6PD A–; G6PD B+ is the normal enzyme found in the most population; G6PD A+ is common in the African–American populations; G6PD B– is common in Mediterranean populations.

334. (e) Affected children have a moderate hypertension (30 mm higher than the unaffected family members of the same age) in patients with glucocorticoid–suppressible hyperaldosteronism (familial hyperaldosteronism type I). This is an autosomal dominant disease. A strong family history of early–onset hypertension or early strokes may indicate this disease.

335. (e) The glucocorticoid (e.g., prednisone or dexamethasone) is the preferred therapy in patients with glucocorticoid–suppressible hyperaldosteronism. Some children have symptomatic hypertension and others have asymptomatic hypertension. An additional antihypertensive therapy (e.g., calcium channel blocker) may be required in some cases.

336. (a) Sensorineural deafness occurs due to labyrinthitis following cochlear infection secondary to bacterial meningitis. Hearing loss also occurs due to direct inflammation of the auditory nerves.

337. (a) Pneunmococcal meningitis (30% of cases), meningococcal meningitis (10% of cases), and H. influenzae type b (5–20% of cases) cause sensorineural hearing loss.

338. (b) Phenytoin is preferred to phenobarbital because phenobarbital produces more CNS depression and altered level of consciousness.

339. (d) Focal neurologic signs are **not** present in patients with pseudotumor cerebri but present in patients with brain tumors. Infants with pseudotumor cerebri also appear with bulging fontanel and a "cracked–pot sound" or Macewen sign (resonance sounds produce after percussion) because of separation of cranial sutures.

340. (b) Paralysis of abducens nerve causes diplopia in patients with pseudotumor cerebri.

341. (b) Pseudotumor cerebri.

342. (b) Pseudotumor cerebri is a self–limited condition. CT or MRI scan should be performed before a lumbar tap. Rarely, a lumboperitoneal shunt or subtemporal decompression is indicated when other therapies fail. Some centers perform optic nerve sheath fenestration to avoid optic atrophy and blindness.

343. (e) Hyperparathyroidism does **not** cause pseudotumor cerebri. Hypoparathyroidism can cause pseudotumour cerebri.

344. (e) Obstruction of the **superior** vena cava can cause pseudotumor cerebri. Answer (a), (b), (c), and (d) can cause pseudotumor cerebri.

345. (a) S. aureus

346. (e) P. acnes is the most common organism. Othet organisms are answers (b) and (c).

347. (b) One month

348. (a) There is a **poor** correlation between acne severity and psychological impact, particularly in adolescents.

349. (e) Vitamin D does **not** cause acne. Drug–induced acne is also caused by steroids (e.g., systemic, potent topical), androgens, trimethadione, and lithium carbonate.

350. (e) High concentration of oxygen is used for carbon monoxide poisoning. In severe cases, hyperbaric oxygen therapy is used.

351. (e) Carboxyhemoglobin levels in the blood.

352. (a) Botulism is treated with CDC trivalent antitoxin or DOD heptavalent antitoxin. Prophylaxis for botulism is **not** available like viral hemorrhagic fevers (e.g., Ebola, Marburg, and Lassa).

353. (a) Ciprofloxacin or doxycycline can be used in children with anthrax for treatment and prophylaxis.

354. (a) Intravenous gentamicin, doxycycline, ciprofloxacin, or chloramphenicol can be used in patients diagnosed with plague. All of the above medications can be used as a prophylaxis in patients with plague **except gentamicin**.

355. (a) Penicillin is **not** effective in patients with tularemia. Answers (c) or (d) can be used as a prophylaxis in patients with tularemia.

356. (a) Seabather's eruption is the diagnosis. This is due to allergic hypersensitivity reaction to venom from larvae of thimble jellyfish (Linuche Unguiculata).

357. (e) Symptomatic therapy; topical corticosteroids therapy are also useful.

358. (d) Vitamin K deficiency is more common than DIC (disseminated intravascular coagulation) in patients with HUS.

359. (d) Peritoneal dialysis does not cause HUS. Peritoneal dialysis saves lives in patients with HUS.

360. (e) Hydralazine does not cause HUS like all other antihypertensive medications. Antihypertensive medications are used in patients with HUS.

361. (d) **Hydralazine cause drug–induced lupus and tachycardia**. Hydralazine is an arterial vasodilator like diazoxide, nitroprusside, and minoxidil.

362. (a) **Propranolol and labetalol cause bronchospasms**. Propranolol also causes bradycardia and vivid dreams.

363. (a) Intravenous labetalol or nitroprusside or sublingual nifedipine is the preferred therapy in patients with hypertensive emergencies.

364. (e) Adolescents should be counseled to avoid alcohol and tobacco because of their adverse effects on blood pressure.

365. (c) The blood pressure should be reduced about one third of the total planned reduction during the first 6 hours and remaining two thirds over the following 2–3 days. A rapid reduction in blood pressure may reduce the organ perfusions.

366. (c) Captopril causes **proteinuria**, neutropenia, chronic cough, rash, and dysgeusia (dysfunction of the taste sensation).

367. (d) Percutaneous balloon angioplasty of renal arteries may cure up to 50% of cases of fibromuscular dysplasia causing renal artery stenosis. This procedure is not effective in renal artery stenosis secondary to atherosclerotic plagues. If angioplasty fails, intravascular stent or surgery is indicated.

368. (b) Germinal center B–cells

369. (a) A chest x–ray should be performed to detect the mediastinal mass before the lymph nodes biopsy. This boy is diagnosed with Hodgkin disease.

370. (e) MRI is better than CT–scan to diagnose brain tumors.

371. (a) **Infratentorial** (43.2%) location is more than supratentorial (40.9%) location.

372. (a) **Supratentorial tumors** (e.g., choroid plexus complex tumors and teratomas) are more common in children less than 1 year of age.

373. (a) Infratentorial tumor (e.g., juvenile pilocytic astrocytomas and medulloblastomas) are more common in children from 1–10 years of age.

374. (a) Supratentorial tumors (e.g., diffuse astrocytomas) are more common in children after 10 years of age.

375. (a) **Astrocytomas** (40% of cases) are the most common brain tumor in pediatric age groups. Low-grade **astrocytomas** (23% of cases) are more common than high–grade astrocytomas (11% of cases). **Please remember, juvenile pilocytic astrocytoma (JPA) is the most common astrocytoma in children**.

376. (b) Methicillin causes acquired nephrogenic diabetes insipidus. Ethanol also causes central diabetic insipidus.

377. (e) Ethanol; acquired nephrogenic diabetes insipidus is also caused by clozapine and demeclocycline.

378. (a) Germinomas and pinealomas are the most common primary brain tumors associated with diabetes insipidus. A very large size of craniopharyngiomas and optic gliomas can cause central diabetes insipidus. Histiocytosis and lymphocytic hypophysitis are infiltrative disorders causing central diabetes insipidus.

379. (c) Other complications of growth hormone therapy are gynecomastia, increased total body water during the first 2 weeks of therapy, and normalize a low fasting and postprandial insulin levels. Creutzfeldt-Jakob disease (spngiform encephalopathy) does **not** occur with recombinant GH therapy but can occur 10–15 years after the treatment with cadaver pituitary extracts.

380. (e) Neonates and young infants with central diabetes insipidus are best treated with **large volume of fluid therapy** (3 $L/m^2$/day). The use of vasopressin analogs is contraindicated in patients with obligate high fluid intake because a severe hyponatremia can develop.

381. (e) **Intranasal or tablet from of long–acting vasopressin analog dDAVP (desmopressin)** is the preferred therapy for **older children** with central diabetes insipidus.

382. (e) **Intravenous vasopressin is the preferred therapy** for patients with central diabetes insipidus following a neurosurgical intervention. Most patients also require to limit the fluid intake to 1 $L/m^2$/day during antidiuresis. Intravenous fluid therapy should be switched to oral fluid therapy as soon as possible.

383. (c) Sturge–Weber syndrome appears with a **choroidal hemangioma** that may appear as a dark area on the fundus. A cherry red spot on the retina can be found in sulfatide lipidosis, in certain mucolipidoses, and in some forms of neuropathic Niemann–Pick disease.

384. (e) Tuberous sclerosis (Bournville disease) appears with a refractile, yellowish multinodular cystic lesion from the retina or disc. A retinal detachment can be found in patients with trauma, retinopathy of prematurity, myopia, after congenital cataract surgery, diabetes mellitus, and ocular inflammation.

385. (a) Middle ear fluid is the most common cause of conductive hearing loss (CHL) in children.

386. (a) Genetic causes are responsible for up to 50% of sensorineural hearing loss (SNHL) in children. CHL is more common than SNHL in children. The peripheral hearing loss is more common than the central hearing loss. The peripheral hearing loss extends from pinna up to cochlea. The central hearing (retrocochlear) extends from the proximal 8th cranial nerve up to cerebral cortex. The other cause of SNHL are anatomic, autoimmune, and traumatic.

387. (e) The congenital CMV is the most common infectious cause of congenital SNHL in children.

388. (a) Autosomal recessive genetic causes of SNHL (up to 80% of all childhood cause) include both syndromic and nonsyndromic children.

389. (a) Waardenburg syndrome (type I and II) and brachiootorenal syndromes are the most common causes of autosomal dominant syndromic type of SNHL.

390. (c) Primidone causes aggressive behavior and personality changes similar to phenobarbital. **Valproic acid** also causes Stevens–Johnson syndrome. Answer (a), (b), (d), (e), and valproic acid can cause erythema multiforme and toxic epidermal necrolysis.

391. (e) Gentamicin causes ototoxicity and nephrotoxicity. Tetracyclines and quinolones can cause Stevens–Johnson syndrome. Answer (a), (b), (c), (d), tetracyelines, and quinolones can cause erythema multiforme and toxic epidermal necrolysis.

392. (e) S. aureus infections do not cause Stevens–Johnson syndrome. Other infectious agents cause Stevens Johnson syndrome such as Epstein–Barr virus, hepatitis B, histoplsma, enteroviruses, yersenia, coccidioides, and Francisella tularensis. Answer (a), (b), (c), (d), and all above mentioned infectious agents can cause erythema multiforme and toxic epidermal necrolysis.

393. (a) There is no infection in the Legg–Calve–Perthes disease. The classic presentation of this disease is "painless limp".

394. (a) Observation is indicated in all children **younger than 6 years of age** (possible younger than 5 years in girls).

395. (b) **The endocrine system** should be evaluated in patients with slipped capital femoral epiphysis that was **diagnosed at 10 years of age or younger**. Hypothyroidism, pituitary disorders, and pseudohypoparathyroidism should be ruled out.

396. (a) The diagnosis is SCFE (slipped capital femoral epiphysis). The earliest sign in x–ray of the affected hip reveals widening of the physis without slippage (i.e., preslip condition). An obese adolescent with SCFE may appear with pain in the anterior thigh.

397. (a) Epiphysiodesis (closure) of the CFE by pinning with one or two cannulated screws that can be inserted percutaneously under fluoroscopy. The patient is diagnosed with slipped capital femoral epiphysis (SCFE). Answer (a), (b), (c), (d), and (e) are treatments for patients with Legg–Calve–Perthes disease (LCPD). **SCFE patients have "painful limp". LCPD patients have "painless limp"**.

398. (b) Chondrolysis is less common in white and males; chondrolysis is a degeneration of articular cartilage of the hip. Osteonecrosis is the avascular necrosis of the hip due to injury of the vessels supplying the hip.

399. (b) Osteogenesis imperfecta (OI) is an autosomal dominant disorder.

400. (c) 5–7%

401. (c) 50%

402. (d) **Eight** health care visits are recommended for a child from birth up to 1 year of age (i.e. neonatal, first week, 1 month, 2 months, 4 months, 6 months, 9 months and 12 months).

403. (c) **Five** health care visits are recommended for a child after 1 year of age and up to 4 years of age (i.e., 15 months, 18 months, 2 years, 3 years, and 4 years).

404. (c) **Four** health care visits are recommended for a child from 5 years of age and up to 10 years of age (i.e., 5 years, 6 years, 8 years, and 10 years).

405. (c) **Eleven** health care visits are recommended for an adolescent from 11 years of age and up to 21 years of age (i.e., annual visits)

406. (a) A forceful feeding is never recommended for children with failure to thrive. High–calorie supplementation (e.g. Duocal, Polycose, Pediasure, Ensure) may be needed.

407. (e) Weight gain in response to an adequate caloric intake confirms the diagnosis of psychosocial FTT. Psychosocial FTT is more common than organic FTT in USA.

408. (e) Social worker should be involved and emergency food should be provided. Hospitalization is also indicated for diagnostic and laboratory evaluations.

409. (e) The goals of hospitalization for patients with FTT are to educate parents and obtain sustained catch–up growth.

410. (a) About **one third** of children with psychosocial FTT are developmentally delayed and have social and emotional problems.

411. (b) This patient's pediatric trauma score is 6. If the total score is less than 8, refer to a pediatric trauma center. **Pediatric score (+2) for each of the following**: size (more than 20 kg), **airway** (normal) **systolic BP** (above 90), CNS (awake),

**open wound** (none), and **skeletal injury** (none). **Pediatric trauma score, (+1) for each of the following**: **size** (10–20 kg), **airway** (maintainable), **systolic BP** (50–90 mm Hg), **CNS** (obtunded/loss of consciousness), **open wound** (minor) and **skeletal** (closed fracture). **Pediatric trauma scores (–1) for each of the following: size** (less than 10 kg), **airway** (not maintainable), **systolic BP** (less than 50), **CNS** (coma/decerebrate), **open wound** (major/penetrating), **skeletal** (open/multiple fractures). **If the BP cuff is not available:** palpable pulse at wrist (+2), no palpable pulse at groin (+1), no palpable pulse at all (–1).

412. (c) The total pediatric trauma score for this patient is plus 2. She got +2 for size, +1 for airway, +2 for systolic BP, –1 for CNS, –1 for open wound, and –1 for skeletal.

413. (a) The total Glasgow Coma Scale (GCS) for this infant is 7. **A patient with GCS score of 8 or less may require aggressive therapies such as mechanical ventilations and a monitoring of ICP**.

**Glasgow Coma Scales (GCS) scores** (ranges from 3 to 15):

**Eye Opening (maximum points 4)**: spontaneous (4), to voice (3), to pain (2), none (1).

**Motor response (maximum points 6)**: obeys (6), localizes pain (5), withdraws (4), flexion (3), extension (2), and none (1).

**Verbal response (maximum points 5)**:

**For infants and younger children**:

appropriate words, smiles, fixes, and follows (5); consolable crying (4), persistently irritable (3), restless and agitated (2), and none (1).

**For older children**:

oriented (5), confused (4), inappropriate (3), incomprehensible (2), and none (1)

414. (a) His Revised Trauma Score (RTS) is 7. **A score of 11 or less indicates an important trauma**. The GCS score of 8 or less may indicate mechanical ventilation.

**Revised trauma scores (ranges 1–12)**:

4 = GCS (13–15), systolic BP (90 or more), respiratory rate (10–20 per minute)

3 = GCS (9–12), systolic BP (76–89), RR (more than 29/min)

2 = GCS (6–8), systolic BP (50–75), RR (6–9/min)

1 = GCS (4–5), systolic BP (1–49), RR (1–5/min)

0 = GCS (3), systolic BP (0), RR (0/min)

415. (b) The patient with Williams syndrome has a deletion in the chromosome 7q.

416. (e) The patient with velocardiofacial syndrome has a deletion in the chromosome 22q.

417. (c) The patient with Angelman syndrome has a deletion in the chromosome 15q.

418. (c) The patient with Pradder–Willi syndrome has a deletion in the chromosome 15q.

419. (b) Zellweger syndrome. It has similarities with Down syndrome such as hypotonia, 'mongoloid' appearance, and brushfield spots.

420. (d) **The integrated test** combines **first–and–second trimester** screening and can detect **94% of Down syndrome** cases with a 5% false–positive rate or 85% with a 1% false–positive rate.

**Triple test (2nd trimester)**: measurements of serum alpha–fetoprotein, unconjugated estriol, and human chorionic gonadotropin (HCG)

**Quadruple Test (2nd trimester)**: triple test and the measurement of serum inhibin A

**Combined test (1st trimester)**: measurements of serum pregnancy–associated plasma

protein A, free beta–subunit of HCG, and nuchal translucency.

**Integrated test (1st and 2nd trimester)**: measurements of serum pregnancy– associated plasma protein A and nuchal translucency in the first trimester and quadruple test in the second trimester.

421. (a) The patient with trisomy 18 has a **low** MSAFP level.

422. (c) The patient with a twin pregnancy has a high MSAFP level.

423. (a) Patient with BPD should be treated with **fluid restriction, nutritional supplementation** (e.g., 24–30 calories/30 ml formula, protein 3–3.5 g/kg/day), **bronchodialators** (e.g., aminophylline, theophylline, inhalation therapy with albuterol), **diuretics** (e.g., furosemide, hydrochlorthiazide), **oxygen** (i.e., pulse oximeter 95% or above); in severe cases, **inhaled nitric oxide** improves oxygenation.

424. (d) The most common cause of postnatal infections in hospitalized newborns is the contaminated hands of health care personnel.

425. (a) The most cases of postnatal meningitis occur due to a hematogenous spread.

426. (e) Citrobacter diversus is an important cause of brain abscess. Other organisms may cause brain abscesses.

427. (c) Intrapartum antibiotics are **not** used to reduce late–onset GBS infections. Preterm male and female infants have an equal incidents of sepsis.

428. (c) 12 years of age

429. (c) 14 years of age

430. (a) A spinal curve greater than 10 degrees should be monitored by an orthopedist until her growth is complete.

431. (e) Coagulase–negative staphylococci is the most common organism. The organisms in answers (a), (b), (c), and (d) also cause peritonitis. **S. aureus is more common in localized exit or tunnel tract infections**.

432. (a) Introduction of microorganisms at the time of surgery. Hematogenous infections occur 2 years or more after surgery.

433. (b) Systemic antibiotics may salvage the implant in early postoperative infections (i.e., within 2–4 weeks after surgery)

434. (a) A late chronic infection occurs more than 1 month after surgery. The infection is caused by a low virulence organism that contaminated the implant during surgery. This infection responds poorly with antibiotics. Therefore, a removal of the implant is indicated.

435. (a) A. fumigatus

436. (c) IgE

437. (a) The diagnostic criteria for allergic bronchopulmonary aspergillosis also include **proximal** bronchiectasis, reversible paroxysmal bronchiolar obstruction, positive cutaneous reaction to A. fumigatus antigens, and detection of specific serum IgE to A. fumigatus by radioallergosorbent test.

438. (e) Prednisone and bronchodilator are used. Oral antifungal (e.g., itraconazole) is useful in adults but not has been studied in children.

439. (a) Enteropathogenic E. coli and cholera infections

440. (a) Malaria

441. (c) 6–8%; the risk for having malformed offspring in the general population is 3–4%.

442. (e) They have varying degrees of mental retardation.

443. (e) Pallister–Killian syndrome is due to the mosaicism for isochromosome 12p.

444. (e) 50%

445. (c) 66%

446. (e) Chromosome 14 is also associated with atopic diseases.

447. (e) Chromosome 21 is **not** also associated with atopic dermatitis.

448. (a) Exfoliatin

449. (a) Enterotoxin

450. (d) TSST–1 (toxic shock syndrome toxin–1)

451. (a) Coagulase, clumping factor, and protein A can cause boil, abscess, and sinusitis.

452. (e) Teichoic acid is present in the cell wall.

453. (a) Staphylococcus epidermidis produces a slime layer or polysaccharide capsule that prevents opsonophagocytosis.

454. (b) S. epidermidis does not have protein A.

455. (d) Human herpesvirus 8 causes Kaposi sarcomas.

456. (b) Human herpesviruses (HHV) 6 and 7 cause roseola infections. However, HHV–6 is the most common cause of roseola infantum (exanthem subitum or sixth disease).

HHV–5 is the Epstein –Barr virus.

457. (d) MMR and varicella vaccines are **contraindicated** in children with AIDS or immune category C (i.e., severe disease).

458. (a) Congenital malaria should be considered regardless of the use of chemoprophylaxis.

459. (a) Giemsa–stained smears of peripheral blood reveal malaria parasites. **Giema stain results are better than** that of Wright stain and Leishman stain in order to detect malaria parasites. Intravenous quinidine should be given to patients who are vomiting and cannot retain oral medications.

460. (e) Oral vitamin D therapy (not phosphorus) is the preferred therapy in nutritional vitamin D deficiency.

461. (c) 1, 25–vitamin D and phosphorus.

462. (e) Renal insufficiency is the most common cause of hyperphosphatemia in children.

463. (e) Water deficit (percent dehydration x weight),
sodium deficit (water deficit x 80 mEq/L),
potassium deficit (water deficit x 30 mEq/L)

464. (e) Replacement of ongoing losses are always indicated in patients with dehydration to achieve an adequate hydration.

465. (b) The fluid correction time is **24 hours** when the sodium levels are 145–157 mEq/L; the correction time is **48 hours** when the sodium levels are 158–170 mEq/L; the correction time is **72 hours** when the sodium levels are 171–183 mEq/L; the correction time is **84 hours** when the sodium levels are 184–196 mEq/L

466. (e) Infusion of excessive amount of fluid during and after surgery is the most common mistake.

467. (a) Saline (0.45–0.9%), dextrose (5–10%), and kcl (30–50 mEq/L). Kcl supplementation should begin early in pyloric stenosis.

468. (d) Most infants do **not** require nasogastric suctioning because vomiting stops when the stomach is empty.

469. (b) Oral feedings should begin within 12–24 hours after surgery.

470 (d) Endoscopic balloon dilatation is the preferred therapy.

471. (b) SMR stage 2

472. (c) SMR stage 3

473. (d) SMR stage 4

474. (b) SMR stage 2

475. (c) SMR stage 3

476. (d) SMR stage 4

477. (a) A child's bedtime and wake–up time should be about the same (not more than one hour difference) on weekdays, weekends, and holidays.

A child should be allowed to play outside and perform a regular exercise.

A child's bedroom should be quiet and dark (or low–level light is O.K.)

A child's bedroom should have a comfortable temperature.

A child's bedroom should **not** be used for time–out or punishment.

A child's bedroom should **not** have a TV set.

478. (e) An adolescent should not study, read, watch TV on his/her bed.

An adolescent should have a quiet time (i.e., relaxing, calming down, listening to a calm music; not watching scary movies) for about 30–60 minutes before bedtime.

An adolescent should exercise regularly and goes outside under the sunlight everyday.

An adolescent should not have 'catch–up' sleep on weekends and should avoid a long nap (not more than 30 minutes). An adolescent should wake up and go to bed about the same time (not more than one hour difference) on weekdays, weekends, and holidays.

479. (c) Both motor and vocal tics do not have to be present concurrently for the diagnosis.

480. (b) S. aureus infections are not associated with this syndrome.

481 (e) PANDAS; a through history and a positive antistreptolysin O (ASO) titer are indicated to confirm the diagnosis of PANDAS.

482. (b) Prophylactic antibiotic therapy is indicated to prevent the relapse.

483. (a) Psychostimulants may make tics worse in children with Tourette syndrome and ADHD disorder. Clonidine is not used because it causes sedation and hypotension. Haldol and pimozide have side effects. Risperidone or olanzapine is a preferred therapeutic agent for patients with this syndrome. Pharmacological therapy is used when tics interferes with classroom activities and social development.

484. (b) Ringer lactate contains Na 130, Cl 109, K 4, Ca 3, and lactate 28

485. (b) The maintenance Na is 2–3 mEq/kg/day and K is 1–2 mEq/kg/day

1–10 kg: 100 mL/kg fluid per day (4 mL/kg/hour)

11–20 kg: 1,000 mL + 50 mL/kg for each kg above 10 kg

More than 20 kg: 1,500 mL + 20 mL/kg for each kg above 10 kg

486. (c) Bartonella henselae cause **cat–scratch disease that is the most common typical presentation of B. henselae.** The most common atypical presentation is parinaud oculoglandular syndrome. This syndrome includes unilateral **conjunctivitis** followed by preauricular lymphadenopathy. The conjunctivitis is due to the direct eye inoculation due to rubbing with the hands after contacts with a cat.

487. (e) Cat–scratch disease is due to B. henselae infection.

488. (a) Clinical findings with the history of exposure to a cat.

489. (a) Observation and conservative symptomatic therapy are adequate for patients with a CSD. The antibiotics therapy is usually not beneficial. However, if a physician has decided to use antibiotic then answer (b), (c), (d), (e), gentamicin, or trimethoprim–sulfamethoxazole is the best agent.

490. (a) A cesarean section in indicated within 24 hours (preferably 4 hours) of ruptured membranes.

491. (d) A newborn who was delivered either by NSVD or cesarean section, cultures of eyes, nose, mouth, urine, and stool should be performed at 48 hours.

492. (c) Early toilet training (less than 2 years of age) should be discouraged. The average age for toilet training in USA between 35–39 months that is increasing from a previous age between 27–28 months. The cause for this increase is not clear. The fear of sitting on the toilet should be healed with calm and support.

493. (c) 2 years of age

494. (c) 3 years of age

495. (e) The obesity for a child should be monitored at 2 years of age.

496. (e) The participation in an active physical exercise can reduce cardiovascular disease in children.

497. (a) The children should not watch TV more than 1–2 hours per day.

498. (e) Cigarette smoking

499. (a) Temper tantrums are a normal part of child development.

500. (a) A soothing approach to relax the child is the preferred way to manage the child with nightmares or night terrors.

501. (b) Night terrors are characterized by amnesia that is absent in nightmares.

502. (a) Oral (e.g., sucking)

503. (b) Anal (e.g., holding on and letting go)

504. (c) Oedipal (e.g., possessiveness toward parents).

505. (a) Latency (i.e., sexual drive is redirected to the achievement of social and external goals).

506. (e) Genital drives

507. (d) The psychosocial therapy is introduced by Erikson.

508. (e) The cognitive therapy is introduced by Piaget.

509. (c) The psychosexual theory is introduced by Freud.

510. (a) Basic trust develops in infancy.

511. (e) A sense of autonomy is established in infancy by Erikson's psychosocial theories

512. (e) DNA.

513. (a) The PRISM should not be used for decision making in a single patient.

514. (e) The PRISM III does not evaluate liver functions. The PRISM III also includes respiratory conditions (e.g., ABG) and hematologic values.

515. (a) Serum Na is **not** included in the PRISM III chemistry scoring values.

516. (b) The PRISM III scoring system does not include RBC counts, hemoglobin, hematocrit, and WBC differential counts.

517. (e) Respiratory rate is note included. However ABG is included.

518. (e) Polio and H. influenzae type b (due to vaccination) do **not** have an increased incidence in a child-care facility. A few cases of hepatitis B have been reported. However, hepatitis C and HIV cases have **not** been reported.

519. (e) Increased development of the new drugs help us in fighting against bacterial resistance.

520. (e) OPV is indicated in children traveling in less than 4 weeks and cannot receive two doses of IPV before departure.

521. (b) **Cefoxitin**, or **clindamycin plus gentamicin** are also used as prophylaxis after colorectal surgery.

522. (a) **Cefazolin** is also used after compound fractures; **cefazolin or clindamycin** is used in head and neck surgery entering the oral cavity or pharynx; **cefazolin or vancomycin** is used after cardiac surgery, vascular surgery, neurosurgery, and orthopedic surgery.

523. (e) Cefazolin, oral decontamination with neomycin and erythromycin.
524. (e) Vernal keratoconjunctivitis appears with cobblestoning, Trantas dots (yellow–white points on the limbus), Horner points (yellow–white points on the conjunctiva), and Dennie lines (symmetric skin folds parallel to the lower lid margin).
     Vernal conjunctivitis is **not** IgE mediated but occurs in children with allergy, asthma, or atopic dermatitis.
525. (e) Oral allergy syndrome is an IgE–mediated hypersensitivity reaction due to local mast cell activation by fresh fruits and vegetable proteins that cross react with birch pollen and ragweed pollen.
526. (e) Hyperimmunoglobulin E syndrome is autosomal dominant.
527. (e) Morphine
528. (c) Liver Failure
529. (c) 5–6 years of age
530. (c) A nonphysiologic jaundice appears in the first 24–36 hours of life. The serum bilirubin levels more than 12 mg/dL in full-term infants are nonphysiologic.
531. (e) Cocaine does not usually produce withdrawal symptoms.
532. (d) Skin cancer
533. (e) Predisposition to skin cancer
534. (b) Niacin toxicity
535. (a) Niacin deficiency
536. (c) Radiographic findings are **not** specific. Bilateral pulmonary infiltrates are noted in chest x–rays.
537. (b) 2 weeks of age.
538. (d) 30 g/day
539. (b) 2 months of age
540. (b) At 6 weeks of age, infants cry about 3 hours per day.
541. (e) 115 kcal/kg/day
542. (d) 110 kcal/kg/day
543. (c) 100 kcal/kg/day
544. (c) 90–100 kcal/kg/day
545. (d) 20 g/day
546. (c) 15 g/day
547. (c) 12 g/day
548. (b) 8 g/day
549. (a) 6 g/day
550. (e) ADHD (15%); behavioral disorders (6–13%), learning disabilities (7.5%), mental retradation (2.5%), cerebral palsy (0.2–0.3%); hearing impairment (0.08–0.2%), and visual impairment (0.03–0.06%).
551. (c) 13–14 hours per day (i.e., 11 hours per night; 3 hours in 2 naps per day)
552. (c) 5 years of age
553. (e) Snoring represents ‘S’ letter of the BEARS
554. (a) 0–1 year; BEARS sleep screening is used from 2 to 18 years of age.
555. (a) Clozapine should not be used in patients with history of seizure activities. Clozapine also causes agranulocytosis and weight gain.
556. (a) Weight gain; antipsychotic medications can cause anticholinergic effects (e.g., dry mouth, constipation, blurred vision), seizures (especially clozapine), hypersensitivity reactions (e.g., liver, skin), parkinsonism, blood dyscrasias, and agranulocytosis.
557. (a) Risperidone
558. (d) Decreased appetite and possible weight loss; insomnia, tearfulness, and subnormal growth (height and weight) can occur in patients using stimulants that are used in ADHD and narcolepsy.
559. (b) HIV infection causes failure to thrive (FTT) between 3 to 6 months of age. Perinatal infections can cause FTT between 0–3 months of age.
560. (d) A delayed introduction of solid foods can cause FTT between 7–12 months. Other causes of FTT between 3–6 months are psychosocial, inborn errors of metabolism, and cystic fibrosis.

561. (e) Inborn errors of metabolism can cause FTT in patients between 0–6 months of age.
562. (a) Motor delays (e.g., difficulty in sitting, crawling, and walking)
563. (a) Language delays
564. (e) Academic underachievement occurs after 5 years of age (school years).
565. (a) Dysmorphisms; major organ dysfunctions (e.g., respiratory, GI tract, neurological) are also noted.
566. (e) Failure to interact with the environment; hearing and vision impairments should be ruled out.
567. (e) Academic underachievement; behavioral difficulties (e.g., ADHD, anxiety, conduct, and mood) are also noted after 5 years of age.
568. (a) MRI or CT–scan
569. (e) RBCs hemolysis
570. (c) **Effective osmolality**: 2 x Na + glucose ÷ 18
    = 2 x 150 + 108/18
    = 300 + 6 = 306

    **Osmolality**: 2 x Na + glucose ÷ 18 + BUN ÷ 2.8
    = 2 x 150 + 108 ÷ 18 + 30 ÷ 2.8
    = 300 + 6 + 10.7
    = 316.7

    Urea is considered an "ineffective osmole" and hyperosmolality from urea does not cause a fluid shift except during hemolysis. The effective osmolality provides useful information regarding the distribution of fluid between ICF and ECF. **The normal plasma osmolality is between 285–295 mOsm/kg**.
571. (c) Serum sodium is less than 135.
572. (a) Sickle cell disease causes true hyperkalemia.
573. (e) Leukocytosis can cause both spurious hyperkalemia and hypokalemia. Answers (a), (b), (c), and (d) cause true hyperkalemia.
574. (d) Low birth weight infants and IUGR infants.
575. (a) Whole cow's milk has a high content of phosphate. The onset of symptoms occur within first 5–10 days of life but may be as late as 6 weeks of life.
576. (a) A healthy full term neonate develops hypocalcemia due the intake of high phosphate containing food in a relatively large volume and decreased renal phosphate excretion that is due to the physiologically low GFR and high tubular reabsorption of phosphate.
577. (e) DiGeorge syndrome causes hypocalcemia.
578. (a) Bones contain 50–60% of the total body magnesium.
579. (b) Milk alkali syndrome causes hypermagnesemia.
580. (a) Cystic fibrosis causes hypomagnesemia. Magnesium is present in large amounts in certain laxatives, enemas, cathartics, and antacids.
581. (a) Autosomal recessive; tumoral calcinosis is common in black adolescents and causes hyperphosphatemia and heterotopic calcifications.
582. (c) pH 7.35–7.45, $PCO_2$ 35–35, $PO_2$ 100, and $HCO_3$ 20–28
583. (e) Hypoxia is the most common cause of metabolic acidosis in NICU.
584. (a) Lactic acidosis causes metabolic acidosis with an increased anion gap.
585. (a) Ammonium chloride intake causes metabolic acidosis with a normal anion gap.
586. (a) Gordon syndrome is autosomal recessive. This syndrome is pseudohypoaldosteronism type II.
587. (c) A normal anion gap is 8–16.
    Anion gap = Na–Cl–$HCO_3$
588. (a) Emesis or nasogastric suction and use of diuretic are most common causes of metabolic alkalosis in children.
589. (c) $PCO_2$ increases by 7 mm Hg.
590. (a) Gitelman syndrome and Bartter syndrome have a normal BP with metabolic alkalosis. Both syndrome are autosomal recessive disorders.
591. (e) Urine 60%, insensible losses (e.g., skin, lungs) 35%, and stool 5%.

592. (d) The preferred ORS solution with sodium concentrations of 50 mEq/L or less is recommended to avoid hypernatremia. This solution is preferred for mild to moderate dehydrations. The ORS solutions with a low osmolality (i.e., less than 50 mEq/L sodium and low glucose) reduces the total stool volume.

593. (e) ORS therapy in a patient usually fails if administered in small amounts at short intervals. Vomiting may occur during the first 2 hours of administration of ORS. Vomiting usually reduces over time. The volume of ORS can be increased slowly with the increased intervals between feedings. An additional 10 ml/kg ORS should be given for each stool.

594. (a) Streptococcus pneumoniae

595. (c) Infants under 1000 grams should receive an increment of 10–15 mL/kg/day either half–or full–strength preterm formulas or breast milk. The daily volume intake should **not** exceed 20 mL/kg/day. A continuous feeding is also recommended.

596. (d) The feeding increment should **not** exceed 20mL/kg/day for infants over 1500 grams.

597. (e) Intellectual and developmental retardation are more common in full term and preterm LGA infants than that of babies with AGA (appropriate for gestational age).

598. (a) About 20% infants ate post-term. Most of them are term and preterm infants.

599. (e) Hemolysis (e.g.; ABO–and Rh–incompatibility)

600. (e) Hypoglycemia can cause pale appearance; other causes are asphyxia, sepsis, and shock.

601. (b) Liver

602. (a) Kidneys

603. (e) Hypertrophic cardiomyopathy resolves rapidly with cessation of corticosteroid therapy.

604. (a) Cardiac failure. Arrhythmia and sudden death may be the first clinical sings.

605. (b) Viral infection; answer (a), (b), (c), (d), and (e) also cause myocarditis.

606. (a) Sarcomas

607. (c) Chronic furosemide therapy causes ‘contraction alkalosis’ due to contraction of ECF volume.

608. (d) Viral infections (32% of cases), especially CMV infections (25% of cases) are the most common causes of death. Answer (a), (b), (c), and (e) also cause death.

609. (e) PTLD (post –transplant–lymphoproliferative disease) is associated with Epstein–Barr virus. The children can also develop skin cancers.

610. (b) Umbilical artery catheterization and renal artery thrombosis are the most common causes.

611. (a) In patients with ACD (anemia of chronic disease), the absolute reticulocyte counts are normal or low, leukocyte counts are increased, and serum ferritin levels are low or normal. A serum transferrin receptor (TfR) level is evaluated in iron–deficiency anemia but is decreased in marrow RBC hypoproliferation.

612. (e) Powdered milk or goat’s milk causes megaloblastic anemia.

613. (a) Erythroid hyperplasia and initial bone marrow response are noted after 36–48 hours of iron therapy.

614. (e) **12–24 hours**: replacement of intracellular iron enzymes, subjective improvement, decreased irritability, and increased appetite.

**36–48 hours**: initial bone marrow response and erythroid hyperplasia.

**48–72 hours**: reticulocytosis (peaked at 5–7 days)

**4–30 days**: increased hemoglobin levels

**1–3 months**: repletion of stores

615. (d) 1%

616. (e) Observation. In hereditary spherocytosis, if the hemoglobin level is more than 10 g/dL and reticulocyte count is less than 10%, no therapy is indicated.

617. (d) Splenectomy. In hereditary spherocytosis, if the hemoglobin level is less than 10 g/dL and reticulocyte count is more than 10% or massive enlargement of spleen, splenectomy is indicated preferably after 6 years of age.

618. (e) Zinc deficiency

619. (e) A symptomatic gallstone formation is common in adolescent and older children.

620. (e) Parvovirus anti–B 19 IgM is the best diagnostic study. This patient develops severe aplastic anemia secondary to a parvovirus B 19 infection.

621. (e) Priaprism can occur in patients with a sickle cell disease secondary to pooling of blood in the corpora cavernosa.

622. (b) Proteinuria

623. (e) Acute sickle dactylitis

624. (d) Hemoglobin electrophoresis confirms the diagnosis of sickle cell disease.

625. (e) Transcranial doppler (TCD)

626. (e) Blood transfusions are indicated to maintain Hb S below 30% in patients with Hb SS disease when there is an increased blood flow velocity in the cerebral arteries (i.e., more than 200 cm/second)

627. (d) A clinically stable febrile sickle cell child older than 18 months of age can be treated as an out patient if the physician and parents agree that the child is really well. A CBC, blood culture urine culture and chest x–ray should be obtained, and intravenous ceftriaxone should be administered as soon as possible.

628. (e) Bone marrow transplantation can cure alpha–thalassemia patients with hydrops. The deletion of all four alpha–globin genes causes severe anemia and hydrops in the fetus.

629. (e) Exchange transfusion should be performed immediately.

630. (a) All of the following are indications of P–RBC transfusion in infants less than 4 months of age:
Hemoglobin less than 10 g/dL and major surgery;
hemoglobin less than 8 g/dL and symptomatic infants;
hemoglobin less than 13 g/dL and severe cardiac disease;
hemoglobin less than 10 g/dL and moderate lung disease;
hemoglobin less than 13 g/dL and severe lung disease;

631. (e) All of the following are indications of P–RBCs transfusion in children and adolescents:
Acute blood loss (more than 25% of total blood volume);
hemoglobin less than 8 g/dL and marrow failure;
hemoglobin less than 8 g/dL and symptomatic chronic anemia;
hemoglobin less than 13 g/dL and severe cardiopulmonary disease;
hemoglobin less than 8 g/dL in perioperative period.

632. (a) Hematuria is managed by bed rest and 1.5 times maintenance fluid; if hematuria persists after 1–2 days, 20 units/kg F VIII should be given; if hematuria still persists, prednisone is used in HIV–negative patients. F VIII concentrate infusion is also indicated in large subcutaneous hematomas, life–threatening hemorrhages (e.g., CNS, lungs, GI tracts, abdomen), and iliopsoas bleeding.

633. (e) F VIII concentrate is used if other managements fail.

634. (e) VWD (von Willebrand disease) should be ruled out.

635. (a) The patient with type 1 VWD has a prolonged PTT and bleeding time.

636. (c) The patient with type 2B VWD has low platelet counts.

637. (a) Type 1 is the most common type of VWD.

638. (c) Vitamin K. Rat poisoning (superwarfarin) causes vitamin K deficiency.

639. (a) High false–positive (i.e., high sensitivity and low specificity). This problem is worst in preterm infants. Genotyping for CYP 21 improves specificity.

640. (c) Between 4–12 months of age

641. (e) 17–hydroxyprogesterone levels before and 30 or 60 minutes after an IV bolus of cosyntropin (0.125–0.25 mg) (ACTH 1–24) confirm the diagnosis of 21–hydroxylase deficiency (CAH)

642. (b) 11–beta–hydroxylase deficiency causes hypertension in about 66% of cases.

643. (e) Elevated levels of deoxycorticosterone causes high BP.

644. (c) Exogenous administration of glucocorticoid hormones (e.g., high doses are used to treat lymphoproliferative disorders)

645. (b) Functioning adrenocortical tumor, mostly malignant carcinomas, and occasionally bening adenomas.

646. (e) Cushing disease is due to an excessive secretion of ACTH by a pituitary adenoma resulting in bilateral adrenal hyperplasias. Pituitary adenomas may be too small (microadenomas).

647. (a) Autosomal dominant; other features of Carney complex are cutaneous myxomas, thyroid tumor, and testicular tumor.

648. (e) Clinical follow up and periodic reimaging are indicated. The surgical removal is indicated if the adrenal mass is 4 cm or more in diameter. The diagnosis is adrenal incidentaloma.

649. (d) Congenital adrenal hyperplasia does not cause adrenal calcifications. Other causes of adrenal calcifications are hemorrhage into adrenal glands at or immediately after birth, pheochromocytomas, cortical carcinomas, and cysts of adrenal glands.

650. (a) Hemorrhage into adrenal glands at or immediately after birth

651. (a) Noonan syndrome occurs in both males and females. Acute lymphoblastic leukemia and myelomoncytic leukemia can occur in Noonan syndrome.
652. (e) Direct DNA analysis looking for CGG repeat sequences make the definitive diagnosis of Fragile X–syndrome.
653. (b) About 25% larger than normal for age.
654. (e) Syndrome of aromatase excess is an autosomal dominant condition. Excess aromatase activity was noted in skin fibroblasts and transformed lymphocytes.
655. (e) Human growth hormone therapy causes benign, self–limited, and transient gynecomastia.
656. (d) Avoid exposure of exogenous estrogens; the boy's mother has been using a topical estrogen cream. The exposure to a small amount of estrogen by inhalation, ingestion, or percutaneous absorption can cause gynecomastia.
657. (b) Increased levels of estrogens cause gynecomastia.
658. (e) The patients with ciguatera fish poisoning appear with a biphasic illness. **The first phase** symptoms include vomiting, diarrhea, and abdominal pain. **The second phase** symptoms include rash, itching, myalgias, and extremity or circumoral dysesthesias (i.e., reversal of hot and cold sensations).
659. (a) Saxitoxin
660. (a) Supportive care; mechanical ventilation therapy is indicated in patients with a respiratory failure from diaphragmatic paralysis. Intravenous calcium, mannitol, and gabapentin may be used in ciguatera fish poisoning. Cimetidine or ranitdine may be used in severe cases of scombroid fish poisoning. Other types of seafood poisoning require supportive care and intravenous fluids.
661. (d) Sodium nitrite and sodium bicarbonate are used in patients with cyanide poisoning. Nerve agents (e.g., tabun, sarin, soman, VX) can produce these symptoms and signs.
662. (e) BAL is used in patients with lewisite poisoning. Cyanide toxicity can produce these symptoms and signs.

663 (e) Chloride toxicity also cause bronchospasms and is treated with supportive care.

664. (e) Pulmonary edema occurs hours later; bronchospasms occur early. Only symptomatic care is indicated.
665. (d) Seizure activity occurs in cyanide and nerve agents (e.g., VX, sarin, soman, tabun) poisoning. Lewisite poisoning is treated with BAL. Mustard poisoning is treated with symptomatic care.
666. (c) Hydronephrotic kidney or multicystic dysplastic kidney
667. (e) Posterior urethra (above the external sphincter) (47% of cases)
668. (e) Urethra (at the bladder neck) (35% of cases) and urethrovaginal septum (35% of cases).
669. (a) UTI or epididymitis
670. (d) Urinary incontinence with the exception of the ectopic ureter entering the bladder neck.
671. (d) Musculokeletal (e.g., limb abnormalities, scoliosis) (more than 50% of cases).
672. (c) Oligohydramnios and pulmonary hypoplasia are frequently noted in the perinatal period. The triad syndrome or Eagle Barrett syndrome or prune–belly syndrome includes answers (a), (b), and (e).
673. (d) The tip of the catheter is coiled in the posterior urethra.

(d) Remove the catheter and reinsert a new catheter (No. 5 or 8 French)

674. (a) VCUG (voiding cystourethrogram) or perineal ultrasonography
675. (e) Endoscopic transurethral ablation of the posterior urethral valve
676. (a) Vesicostomy is performed because the patient may have secondary ureteral obstruction, irreversible kidney damage or renal dysplasia.
677. (c) 15 to 20 times per day
678. (c) The average bladder capacity in ounces is equal to the **age (in years) plus 2**. This formula is useful up to 14 years of age. The answer is 6 ounces.
679. (e) Noctural enuresis is diagnosed at 5 years of age.
680. (b) 44% of cases
681. (d) 77% of cases
682. (b) The pathogenesis of primary enuresis also includes sleep apnea (i.e., snoring) is due to enlarged adenoids; enuretic children are deep sleepers (i.e., difficult to arouse); chromosome 12 and 13; UTI or obstructive uropathy is an uncommon cause of enuresis; psychologic factors are important in secondary enuresis.
683. (e) A rectal examination after voiding is useful to diagnose a chronically distended bladder. The neurologic and spinal abnormalities should be ruled out. The bacteriuria and glycosuria should be rules out.

684. (e) No further investigations are indicated. A renal ultrasonography may be needed in older children or in children who did not respond to therapy.

685. (d) Adenoidectomy can cure primary enuresis in children with enlarged adenoids.

686. (d) Holding urine for a longer period in day time is not helpful. Conditioning therapy involves auditory or vibratory alarm system is useful in older children. Some children respond to self–hypnosis.

687. (a) The preferred therapy is desmopressin acetate tablets at bedtime. Desmopressin nasal sprays can cause hyponatremia and are not effective in children with runny nose.

688. (e) Imipramine

689. (d) Low grade astrocytoma followed by an ependymoma. These tumors arise within the spinal cord, usually in the cervical region.

690. (a) Lateral displacement of the medial cathi with dystopia canthorum (99% of cases); answers (b), (c), (d), and (e) are also clinical feature of Waardenburg syndrome.

691. (e) Hearing test

692. (b) Autosomal dominant

693. (e) Mental retardation (70% of cases); other associated anomalies are answers (a), (b), (c), (d), muscular hypotonia, nystagmus, and cardiac defects.

694. (c) Kidney disorder

695. (b) IgA dermatosis (chronic bullous dermatosis of childhood)

696. (b) Alkalization and good urinary output can prevent crystal formations within the renal parenchyma. Sulfapyridine is used in linear IgA dermatosis.

697. (e) Gluten–sensitive enteropathy (75–90% of cases)

698. (d) Sulfapyridine or dapsone (oral)

699. (b) T. mentagrophytes

700. (a) Serial plaster casts are usually changed every 1–2 weeks. A complete correction should be achieved by 3 months of age.

701. (e) The preferred surgical treatment is a complete soft tissue release. The surgery is performed between 6–12 months of age.

702. (a) In prerenal ARF, BUN/creatinine ratio is more than 20.

703. (e) Urine osmolality is less than 350 mOsm.

704. (c) Hypoglycemia; other side effects are congestive heart failure and loss of concentration or memory.

705. (a) Verapamil causes hypotension, bradycardia, and cardiac arrest in infants younger than 1 year of age.

706. (e) Adenosine

707. (d) Synchronized DC cardioversion

708. (b) JLNS is associated with congenital deafness. JLNS is an autosomal recessive disorder. It is an uncommon form of long Q–T syndrome.

709. (c) Hepatoblastoma; majority of hepatic tumors (50–60% of cases) in children are malignant.

710. (e) Elevated alpha–fetoprotein, anemia, thrombocytosis, negative hepatitis B and C, usually normal liver enzymes and bilirubins are noted in patients with hepatoblastomas.

711. (a) 3 months of age

712. (e) Occasionally, a pineal area tumor is noted in patients with retinoblastoma.

713. (b) About 6 years of age

714. (c) Chromosome 13q; the newborn has retinoblastoma. The retinoblastoma gene (RBI) is located on chromosome 13q.

715. (e) Opthalmologic examination under general anesthesia

716. (a) Local control of intraocular tumor and effective chemotherapy. However, the treatment is determined by the size and location of the tumor.

717. (a) A 10–year–old girl with one episode of **afebrile** UTI, may not need VCUG study. The indications of VCUG are the following: any male with UTI, any child with a febrile UTI, all children younger than 5 years of age with UTI, school–aged girls who had two or more UTIs.

718. (c) The incidence of reflux (IOR) is identical.

719. (c) Before the child is discharged from the hospital.

720. (a) In boys, a contrast VCUG is recommended to determine the radiographic definition of the urethra.

721. (d) The DMSA renal scan is the preferred study to determine renal scars.
722. (e) DMSA renal scan is the preferred study; renal CT–scan is a good study to determine acute pyelonephritis. Renal ultrasonography can determine the acute pyelonephritis (30–60% of cases) by demonstrating an enlarged kidney.
723. (e) Urethral calibers are **normal** in girls with UTIs.
724. (b) DMSA renal scan results reveal parenchymal damage in 50% of children with a febrile UTI, irrespective of age. The photopenic areas in renal scans indicate acute pyelonephritis and renal scarring.
725. (e) Epstein–Barr virus; patients with a nasopharyngeal carcinoma appears with cervical lymphadenopathy, epistaxis, trismus, and may be cranial nerve involvements.
726. (b) Poor perineal hygiene
727. (e) E. coli
728. (c) Sitz baths with a mild soap are useful in nonspecific vulvovaginitis.
729. (c) Amoxicillin or cephalosporin is the preferred therapy.
730. (e) Gardnerella vaginalis
731. (d) Wadden toilet paper; a foreign body in the vagina causes foul–smelling discharge and vaginal bleeding.
732. (b) 8½ years of age
733. (e) Self–examination of the breast can detect the breast anomaly.
734. (b) Lie down supine and put a pillow under the right shoulder during the right breast examination and put a pillow under the left shoulder during the left breast examination. Breast examination can be performed during bathing and by looking through the mirror.
735. (e) Fibroadenomas (54% of cases)
736. (e) Diphenhydramine usually controls the clusters of attacks in patients with a benign paroxysmal vertigo.
737. (e) Reassurance; masturbation or self–stimulation behavior may occur in girls between 2 months and 3 years of age. The cause is unknown in most cases. However, a sexual abuse or abnormalities of the perineum should be ruled out. This activity will subside by 3 years of age and no therapy is indicated.
738. (e) Reassurance; a visual acuity of 20/40 is normal for 3–year–old children.
739. (e) Reassurance; a visual acuity of 20/30 is normal for 4–year–old children.
740. (b) By 5–6 years of age, most children have a 20/20 vision.
741. (d) Lead–based paint
742. (a) A child with a venous blood lead level **45 micrograms/dL** or more should receive chelation therapy. AAP recommends to repeat the venous blood lead level by 1 week when the lead levels are between 20–44 micrograms/dL.
743. (c) DMSA is a preferred therapy in patients with a blood lead levels are **between 44 and 70 micrograms/dL**.
744. (d) EDTA and DMSA, or EDTA and BAL are used in patients with venous blood lead levels **70 micrograms/dL and above without encephalopathy**.
745. (a) EDTA and BAL are used in patients with **lead encephalopathy** when the blood lead levels are **70 micrograms/dL and above**.
746. (a) Repeat within 2 months in patients with venous blood lead levels are between 15–19 micrograms/dL. AAP recommends to repeat the blood test by 1 month.
747. (b) Department of health referral is **not** required when the venous blood lead level is **less than 15 micrograms/dL** (i.e., 10–14 micrograms/dL). AAP recommends to repeat the blood test by 1 month.
748. (b) Autosomal dominant
749. (e) **Spectrin or ankyrin** is a major component of cytoskeleton of RBCs.
750. (e) After 5–6 years of age
751. (e) Thrombocytosis
752. (e) No treatment is needed; thrombocytosis resolves spontaneously.
753. (b) Oral prophylactic penicillin V should be given **after** splenectomy. A child under 5 years of age should receive oral prophylactic penicillin 125 mg twice daily. The dose of penicillin is 250 mg twice daily from 5 years to adulthood.
754. (e) Osteoid osteoma
755. (e) Osteosarcoma
756. (a) TP53 gene mutation is noted in a familial cancer syndrome (e.g., Li–Fraumeni syndrome).

757. (e) Osteosarcoma
758. (b) Osteosarcoma is produced by irradiation therapy for Ewing sarcoma, brain tumor, and other malignancies.
759. (e) High risk of osteosarcoma
760. (e) Ewing sarcoma has a characteristic onion–skinning (i.e., a lytic bone lesion with periosteal reaction) appearance in x–ray studies.
761. (a) Osteosarcoma has a characteristic sunburst appearance in x–ray studies.
762. (b) Total parathyroidectomy is indicated in most newborns with a severe hypercalcemia secondary to hyperparathyroidism.
763. (e) Elevated PTHrP levels cause hypercalcemia in malignancy. Serum PTH levels are rarely elevated.
764. (c) 28 weeks of gestational age
765. (c) 32 weeks of gestational age
766. (d) 37 weeks of gestational age
767. (d) 38 weeks of gestational age
768. (d) 29–32 weeks of gestational age
769. (c) 20/150
770. (c) X–linked recessive
771. (e) The usual serum level of CK is between 15,000–35,000 IU/L (normal is less than 160 IU/L). The serum CK levels may be lower in terminal stages of the disease because less muscle mass is available to degenerate.
772. (a) Muscle biopsy reveals deficient or defective dystrophin, or DNA analysis of the peripheral blood is diagnostic.
773. (c) Before 3 months of age
774. (c) No later than 6 months of age
775. (d) 6 months of age
776. (c) Audiologic assessment
777. (b) **In conductive hearing loss**, the bone conduction results are better than that of air conduction. This is called air–bone gap. The child has problems in outer and/or middle ear (e.g., cerumen, otitis media, perforated tympanic membrane).
778. (e) **In normal ear**, the air conduction and bone conduction results are about the same but air conduction is slightly better than bone conduction. Air–bone gap is absent.
779. (e) In sensorineural hearing loss (e.g., CMV, toxoplasmosis, herpes), air conduction and bone conduction are abnormal.
780. (b) Eosinophils are found in erythema toxicum neonatorum.
781. (e) Polymorphonuclear leukocytes are found in benign pustular melanosis.
782. (e) Nursemaid's elbow is treated by rotating the hand and forearm to a supinated position with pressure over the radial head.
783. (b) ASD (atrial septal defect)
784. (a) Autosomal recessive
785. (c) Normal serum C3 levels
   (b) IgA nephropathy
   (c) Most children will not develop a chronic renal disease until adulthood.
786. (e) A careful long–term follow–up is indicated because 20–30% of children with IgA nephropathy develop a progressive renal dysfunction 15–20 years after the onset of the disease.
787. (e) Acquired bilateral sensorineural hearing losses
788. (a) Asymptomatic microscopic hematuria
789. (e) Normal cardiac anatomy because all the parameters are normal. Please remember, the all normal values. This newborn has the x–ray findings of TTNB (transient tachypnea of the newborn).
790. (e) Left superior vena cava (40% of case)
791. (a) Infracardiac (95–100% of cases)
792. (e) Surgical correction of TAPVR (obstructive type)
793. (a) Prostaglandin $E_1$ infusions are indicated in patients with TAPVR (nonobstructive type) before the surgical correction.
794. (a) Asthma is an obstructive lung disease.
795. (a) Pulmonary fibrosis is a restrictive lung disease. Restrictive lung disease also includes pneumothorax, pulmonary collapse, diaphragmatic hernia, persistent pulmonary hypertension due to collapse, pulmonary interstial emphysema, and pulmonary tuberculosis.

796. (a) Laryngomalacia causes variable extrathoracic obstruction.
797. (c) Frontal sinuses appear at 7–8 years of age and are not completely developed until adolescence.
798. (a) Only ethmoidal sinuses are pneumatized at birth.
799. (e) Amoxicillin; answers (a), (b), (c), or (d) is used in patients who are allergic to penicillin.
800. (e) Intravenous ceftriaxone is started initially in patients with frontal sinusitis because it can progress to a serious intracranial complication. However, the treatment is completed with an oral antibiotic therapy.
801. (e) Cefotaxime (or ceftriaxone) and vancomycin should be started immediately.
802. (b) 10–30% of cases
803. (b) Intravenous cefuroxime (75–150 mg/kg/day)
804. (b) Oral amoxicillin
805. (d) Bilateral renal masses
806. (e) Liver diseases (45% of cases) are present in patient with ARPKD.
807. (e) EEG is not indicated; initial evaluation also includes blood pressure and serum glucose monitoring.
808. (c) Cholestatic jaundice does not cause seizure activities.
809. (e) Herpes simplex virus encephalitis usually involves temporal lobes.
810. (d) Rifampin
811. (e) Central corneal opacity (leukoma); answers (a), (b), (c), and (d) are associated abnormalities in a patient with Peter anomaly.
812. (d) Esodeviations (i.e., inward deviation or convergent) are the most common type (over 50% of cases).
813. (e) Amblyopia (i.e., secondary visual loss) occurs in 30–50% of cases with strabismus.
814. (e) Pneumococcal meningitis; age appropriate vaccination is recommended for children.
815. (d) S. aureus, phage group 2, and type 71
816. (c) S. aureus
817. (e) Shoulder
818. (e) Surgical repair is indicated when hydroceles persisted beyond 12–18 months of age and this persisted hydrocele is usually communicating.
819. (a) Most hydroceles resolve by 12 months of age. Most hydroceles are noncommunicating.
820. (a) Marrow failure (60% of cases); other patients appear with intermittent or chronic anemia, thrombocytopenia, leukopenia, and chronic hemolysis.
821. (a) Flow cytometry is more sensitive than classic RBC lysis tests.
822. (c) Infection
823. (e) CMV (cytomegalovirus) infections are the most common.
824. (a) Williams syndrome
825. (e) Immediately before a dose but at minimum 4 hours after the last dose
826. (e) Hypokalemia and hypercalcemia increase digitalis toxicities.
827. (e) A new rhythm disturbance is noted. The normal blood levels of digoxin are 2–4 ng/dL in infants and 1–2 ng/dL in older children.
828. (c) IVIG increases the platelet counts in ITP (idiopathic thrombocytopenic purpura).
829. (e) Shiga–toxin producing E. coli 0157:H7 (80% of cases) causes acute enteritis and diarrhea in HUS.
830. (e) Doppler flow studies of the IVC (inferior vena cava) and renal vein confirms the diagnosis of renal vein thrombosis. Ultrasonography reveals enlarged kidney. Renal scan reveals little or no renal functions. Contrast studies cause more vascular damages.
831. (c) Children with iron deficiency anemia may be obese or may be underweight.
832. (d) From 4 months of age
833. (b) 0.8 mg/day
834. (c) 8–10 mg/day; the absorption of dietary iron is about 10%.
835. (a) Ebstein anomaly of the tricuspid valve is treated with either aortopulmonary shunt alone or by surgical patch closure of tricuspid valve, atrial septectomy, and aortopulmonary shunt (Starnes procedure).
836. (e) Arterial blood gas

837. (e) Endotracheal intubation causes acquired laryngotracheal stenosis in 90% of cases.
838. (a) Bleeding
839. (a) Vitamin K; warfarin should be stopped.
840. (a) Cyclophosphamide and ifosfamide cause hemorrhagic cystitis and alopecia.
841. (e) Vincristine causes peripheral neuropathy, jaw pain, alopecia, and constipation.
842. (c) Maternal diabetes
843. (e) Deletion of chromosome 22q
844. (b) Renal anomalies (35% of cases), velopharyngeal insufficiency (32% of cases), truncus arteriosus (25% of cases), cleft palate (9% of cases) and aplasia of thymus (1% of cases)
845. (a) In Gradenigo syndrome, otitis media causes mastoiditis, petrositis, edema of the dura, and pressure on the 6th cranial nerve.
846. (e) Normal tympanic membrane
847. (e) Normal tympanic membrane. A red tympanic membrane may be noted after crying, sneezing, or nose–blowing without otitis media.
848. (d) The usual mode of inheritance in patient with familial hypophosphatemia (x–linked hypophosphatemia, vitamin D–resistant rickets) is x–linked dominant.
849. (b) Diarrhea
850. (c) 6–12 months
851. (e) In 90% of uncircumcised boys, the prepuce is normally retractable by 3 years of age.
852. (b) The application of corticosteroid cream to the foreskin three times per day for 1 month can releases the phimotic ring about 66% of cases.
853. (a) A circumcision is recommended for boys who have a phimosis beyond 10 years of age.
854. (b) Phimosis
855. (a) Affected children have low–birth–weight and sparse subcutaneous tissue.
856. (b) 10–40 mg/dL is normal for children 3 months of age and above.
857. (c) 120 mg/dL. The CSF protein falls to the normal childhood ranges (10-40 mg/dL) by 3 months of age.
858. (e) Insulin does not cross the placenta and does not cause neural tube defects. Primidone also causes neural tube defects.
859. (b) 3–4%
860. (b) 10%
861. (e) Acanthocytes
862. (c) Chromosome 11q
863. (e) Vancomycin and cefotaxime, or vancomycin and ceftriaxone are used because 25–50% of S. pneumoniae are resistant to penicillin and up to 25% of S. pneumoniae are resistant to cefotaxime and ceftriaxone.
864. (e) Chloramphenicol
865. (a) Ceftazidime and an aminoglycoside
866. (c) H. influenzae type b
867. (a) Four to five million children and adolescents in USA work for pay.
868. (a) History
869. (e) Refer to a pediatric environmental specialty unit
870. (e) Fusobacterium necrophorum (anaerobic oropharyngeal bacteria)
871. (a) Lemierre disease is treated with intravenous penicillin or cefoxitin; surgical drainage is indicated in patients with extrapulmonary metastatic abscess.
872. (c) Aspirin should be avoided as an antipyretic in patients with influenzae or chicken pox because aspirin can cause Reye syndrome.
873. (e) Reye syndrome
874. (d) Biliary sludge
875. (d) Erythromycin estolate and chlorpromazine can cause cholestatic hepatitis.
876. (e) A rapid decrease in liver size without clinical improvement is a dangerous sign.

877. (b) Hypoproteinemic edema; answers (a), (c), (d), and (e) can cause an elevated concentration of sweat chloride like cystic fibrosis.
878. (a) Acute or persistent respiratory symptoms are noted in 50.5% of cases.
879. (c) Early diagnosis of CF does not improve pulmonary outcome. The newborn screening test should be confirmed by sweat–chloride or DNA testing.
880. (e) Hypoxia or ischemia is caused by perinatal asphyxia.
881. (a) Cryptorchidism (80% of cases); Mullerian duct structures (e.g., uterus, Fallopian tubes) should be removed surgically without damaging the male genital organs.
882. (e) An elevated WBC count does not cause xanthochromic CSF.
883. (a) A transverse injury at the C1–C2 levels cause respiratory arrest and death without ventilatory support.
884. (c) This child has a characteristic presentation of injuries (i.e., fracture, dislocations) at the C5–C6 levels that is the most common cause of acute spinal cord injuries.
885. (e) S. pneumoniae infection does not cause Bell palsy.
886. (a) CSF protein is elevated to more than twice the upper limit of normal, glucose level is normal, and absence of pleocytosis (i.e., less than 10 WBC counts).
887. (d) Hypertension may be noted in Bell palsy.
888. (e) Pheochromocytoma in the urinary bladder wall causes gross hematuria.
889. (e) Always isosexual
890. (e) The child may have an associated growth hormone and/or thyroid hormone deficiency.
891. (e) In postpericardiotomy syndrome, patients may develop pericardial effusion and cardiac tamponade.
892. (a) Salicylates or indomethacin and bed rest are indicated. Sometimes, steroid therapy or pericardiocentesis is required.
893. (e) Pneumomediastinum
894. (e) Plain chest x–ray
895. (e) Petechial hemorrhage are noted in more than 90% of cases.
896. (a) Severe pulmonary vascular disease
897. (b) Hypertension
898. (e) Cardiomyopathies
899. (e) Congenital heart lesions (75% of cases)
900. (d) Lymphocytic thyroiditis
901. (d) Diarrhea
902. (c) 11½ years of age
903. (c) 13½ years of age
904. (c) 16 years of age
905. (c) 18 years of age
906. (d) Menarche occurs approximately 1 year after the growth spurt begins.
907. (d) X–linked dominant
908. (d) 4 mL/kg of 10% glucose
909. (b) 2 mL/kg of 10% glucose
910. (b) 1–3 hours of age
911. (b) Autosomal dominant
912. (a) Microtia or anotia, and other craniofacial anomalies.
913. (e) Erythromycin
914. (c) Pseudomonas (74% of cases)
915. (d) Metronidazole
916. (e) Pleconaril
917. (a) Smoking decreases serum creatinine, albumin, globulin (in females), and uric acid (in males).
918. (c) Nicotine patch
919. (e) Physical dependence on nicotine can occur in adolescents using SLT. Therefore, SLT should not be used.

920. (e) Malignancy can occur in lesions. The lesions are located in the mandibular mucobuccal fold.
921. (b) Bronchial asthma
922. (e) High eosinophil counts (i.e., more than 450 eosinophils per microliter of blood)
923. (e) RAST
924. (a) Skin test is more sensitive than RAST.
925. (e) Leukocyte counts are between 10–500 cells/mm$^3$, mostly lymphocytes (initially polymorphs may be presents), glucose is usually less than 40 mg/dL but rarely less than 20 mg/dL, and protein levels are between 400–5,000 mg/dL.
926. (e) The newborn should be with the mother.
927. (b) The INH treatment of the newborn is very effective. Therefore, a separation of the mother and infant is no longer mandatory if the mother is asymptomatic.
928. (d) INH, rifampin, and ethambutol are preferred therapies; aminoglycosides and ethambutol are teratogenic; the use of pyrazinamide may not be safe during pregnancy.
929. (e) Azithromycin, erythromycin, or clarithromycin is used in Mycoplasma pneumonia. Coryza is usually present in viral infections. Pneumonia in a school–aged children, especially if cough is a persistent finding, is always indicate Mycoplasma pneumonia.
930. (d) Deafness, cerebellar ataxia, brainstem syndrome and acute demyelinating encephalitis are also neurologic complications of Mycoplasma pneumonia.
931. (b) C. trachomatis and C. psittaci have a MOMP but that is absent in Chlamydia pneumoniae.
932. (d) Lupus cerebritis
933. (a) Sjogren syndrome is not associated with ANA. Other conditions that are associated with ANA are SLE, drug–induced lupus, vasculitis syndrome, juvenile dermatomyositis, and juvenile arthritis.
934. (b) Epididymitis
935. (c) Gonococcus urethritis has a characteristic yellow–green purulent discharge.
936. (d) Chlamydia urethritis has a characteristic white mucopurulent urethral discharge.
937. (d) 150 kcal/kg/day (ideal weight)
938. (d) 12 months of age
939. (b) 15 months of age
940. (c) 18 months of age
941. (a) 2 years of age
942. (a) A 2–year–old uses 2 words in a sentence. Between 2 to 5 years of age, the number of words in a typical sentence equals the child's age (i.e., a 4–year–old uses 4 words in a sentence).
943. (b) 2½ years of age
944. (c) 4 years of age
945. (c) 5 years of age
946. (b) 3 years of age
947. (e) Chronic constipation
948. (e) Micturition deferral
949. (a) None; an adequately breast–fed or formula–fed infant does not need an additional water for the first several weeks to months of life because breast milk and formulas contain at least 90% water.
950. (a) The cow milk is **not** recommended before 12 months of age.
951. (b) 75–100 mL/kg/day
952. (a) The serum pH is normal in patients with a neonatal nonketotic hyperglycinemia (NKH). The answer (e) is diagnostic of NKH. The glycine concentration in CSF (15–30 times normal) is higher than that in plasma (up to 8 times normal).
953. (a) Neonatal NKH is the most common form of NKH.
954. (d) Phosphatidylcholine (65% of the total)
955. (e) Acneform lesions
956. (d) Testicular atrophy
957. (a) Breast atrophy
958. (a) Depression

959. (a) Hypertension
960. (e) About 80% of patients with atopic dermatitis develop allergic rhinitis and/or asthma.
961. (a) Perianal streptococcal disease or perianal dermatitis
962. (c) The rheumatogenic potential is **not** solely dependent on the serotypes. ‘Skin’ strains (e.g., M types 49, 55, 57, and 60) and ‘pharyngeal’ strain (e.g., M type 12) are nephritogenic.
963. (c) Actinomycosis contains sulfur granules. Penicillin is the preferred agent for an oral therapy.
964. (d) Vestibular or auditory portion of the 8th cranial nerve.
965. (a) Hepatitis
966. (d) Ethambutol can cause optic neuritis and red–green color blindness.
967. (d) Amphotericin B is used for candida infections.
968. (b) Renal function
969. (c) Prematurity and prolonged ventilatory support are also risk factors for neonatal candidiasis.
970. (e) The systemic therapy with fluconazole or itraconazole is usually needed; topical therapy may be useful.
971. (d) Acyclovir therapy is indicated for neonatal herpes infections.
972. (e) Neutropenia; ganciclovir can prevent hearing loss and improves or maintains a normal hearing at 6 months of age and may prevent hearing loss at 1 year of age or older.
973. (e) All people do not have an equal access to health care.
974. (d) A physician can oppose if the risk to the pregnant woman is negligible, the procedure is effective, and the harm to the fetus is permanent and substantial.
975. (e) The physician should treat the patient, should not notify the parents, but should notify the appropriate health authorities.
976. (c) Physician should act on a child’s ‘best interest’.
977. (d) Stop vitamin A; this child has a clinical manifestation of chronic vitamin A toxicity.
978. (e) Anorexia and lassitude are also the early clinical manifestations of niacin deficiency. Dermatitis, diarrhea, and dementia occur after a long period of deficiency.
979. (a) Carpopedal spasm is usually not present in a newborn with hypocalcemia.
980. (e) Intravenous calcium is given in a patient with hypocalcemia tetany.
981. (a) Temperature of the warm water should be about 42°C. Prazocin or phenoxybenzamine is useful because of their vasodilating effects. Anticoagulants (e.g., heparin, dextran) and surgical sympathectomy may or may not be useful. Oxygen is useful in high altitudes.
982. (c) 70 mL/hour. The formula is the first 1 to 10 kg = 4 mL/kg/hour, next 10 to 20 kg = 2 mL/kg/hour, after 20 kg = 1 mL/kg/hour. Therefore, a 30 kg child should receive (4x10) + (2x10) + (1x10) = 40+20+10 = 70 mL/hour.
983. (c) 8–10 mL/kg/hour; for a major surgery (e.g., thoracic or abdominal), there is a large amount of evaporative fluid loss.
984. (b) 3–5 mL/kg/hour; for a minor surgery (e.g., pyloromyotomy), there a small amount of evaporative fluid loss.
985. (c) 0.6–0.7 mL/kg/hour
986. (c) 2–3 mL/kg/hour
987. (b) Gastric ulcer is common in newborns. This is due to a stress.
988. (b) 2–7 days of age; factors II, VII, IX, and X return to normal by 7–10 of age.
989. (d) Vitamin K is used initially and FFP is used when bleeding is not controlled with vitamin K. The mother was receiving either phenobarbital or phenytoin.
990. (c) Hypergammaglobulinemia is an associated finding in Muckle-Wells syndrome.
991. (e) A variety of proteins derived from insects become airbone and induce IgE–mediated respiratory responses.
992. (e) Vasoactive materials (e.g., histamine, acetylcholine, kinins)
993. (c) Urticaria occurs in localized skin reaction.
994. (e) Avoidance of the insect
995. (e) The use of an oral antibiotic is not indicated unless there is a secondary infection. The venom has some antibacterial actions.
996. (e) Ptyalin is absent in cockroaches.
997. (b) Vancomycin infusion can cause **red man syndrome** due to release of a nonspecific histamine. This syndrome can be prevented by administration of $H_1$–blocker before the infusion and slowing the infusion of vancomycin.

998. (c) Epoxide hydrolase is needed for the metabolism of arene oxide intermediates produced during the metabolism of anticonvulsant medications in liver.
999. (b) Beta toxin causes hemorrhagic necrosis of the small intestine.
1000. (c) Alpha toxin causes hemolysis, platelet lysis, increased capillary permeability, and hepatotoxicity. Epsilon toxin damages vascular endothelial cells resulting in increased vascular permeability, edema, and organ dysfunction. Iota toxin causes dermal edema.
1001. (e) C. perfringens (type C strains produce beta toxin) causes enteritis necroticans or pigbel.
1002. (e) Ultrasonography or fluoroscopic examination reveals elevation of the paralyzed diaphragm and seesaw movements of both sides of diaphragm during respiration.
1003. (e) Phenobarbital
1004. (e) A 5–minute Apgar scores are 0–3 in severely asphyxiated newborns.
1005. (d) A contrast CT scan or rapid diffusion MRI is preferred diagnostic study for cerebral infarctions.
1006. (a) Hypertension. Liddle syndrome is autosomal dominant. This syndrome has features of hyperaldosteronism but low serum level of aldosterone. This syndrome is due to activating mutation of the sodium channel in distal nephrons.
1007. (b) 6–12 months of age
1008. (d) Carbohydrate 13 grams/100 kcal
1009. (b) Fat 4.4 grams/100 kcal
1010. (b) 71 kcal/dL (maximum) and 63 kcal/dL (minimum)

1. The most common site of pulmonary atelactasis in children is:
   a) Right upper lobe
   b) Right middle lobe
   c) Right lower lobe
   d) Left upper lobe
   e) Left lower lobe

2. A routine newborn physical examination of a newborn reveals a grade 2/6, short, harsh systolic murmur at the apex. The newborn is completely asymptomatic. The most likely diagnosis is:
   a) Atrial septal defect
   b) Ventricular septal defect
   c) Mitral stenosis
   d) Mitral regurgitation
   e) Patent ductus arteriosus

3. All of the following conditions can present with spherocytosis in a peripheral blood smear **except**:
   a) ABO incompatibility
   b) Thermal injury
   c) Wilson disease
   d) Autoimmune hemolytic anemia
   e) Pneumococcal sepsis

4. A 7-day-old newborn girl appears for a routine physical check-up. Her mother noticed a grapelike mass protruding through the child's vagina. The girl is asymptomatic. The most likely diagnosis is:
   a) Vaginal prolapse
   b) Rectovaginal fistula
   c) Urethral prolapse
   d) Uterine prolapse
   e) Sarcoma botryoides

5. A VCUG study in a male newborn reveals massive bilateral ureteral dilatations due to a severe vesicoureteral reflux. The urinary bladder is very distended. There is no urethral obstruction. There is absence of neuropathic dysfunction. The newborn is receiving prophylactic antibiotic. The preferred therapy is:
   a) Resection of posterior urethral valve
   b) Dilatation of urethra
   c) Removal of prostate
   d) Permanent vesicostomy
   e) Reimplantation of ureters into an urinary bladder

6. The most important hormone responsible for the onset and progression of puberty is:
   a) Estrogen
   b) ACTH
   c) TSH
   d) Progesterone
   e) GnRH

7. A 2½ years boy appears with intermittent loose stools for the past 1 month. Stools typically occur during the day and not overnight. The boy is otherwise healthy. The growth and development are normal. The most likely diagnosis is:
   a) Chronic enteritis
   b) Rotavirus enteritis
   c) Salmonella enteritis
   d) Food allergy
   e) Toddler's diarrhea

8. The best diagnostic antibody titer in patients with a streptococcal skin infection is:
   a) Antistreptolysin O titer is elevated.
   b) Serum C3 level is decreased.
   c) Serum C3 level is increased

d) Antistreptolysin O titer is decreased
e) Deoxyribonuclease (DNase) B antigen is present.

9. A 5-year-old boy appears with an abrupt onset of an increased urinary frequency for the last 3 days. He has been voiding every 10-15 minutes during the day. The mother denies history of fever, abdominal pain, dysuria, nocturia, or daytime incontinence. An urinalysis result is normal. The next step in management is:
a) Trimethoprim-sulfamethoxazole
b) Restriction of fluid intake
c) Renal ultrasonography
d) A 24-hour urine sample for calcium
e) Reassurance

10. The following statement is **not** true about Klinefelter syndrome:
a) Maternal age is advanced in most cases.
b) An extra X chromosome is maternal origin in majority of cases.
c) This syndrome is mot commonly due to meiotic nondisjunction of a X chromosome.
d) About 3% of infertile males have a Klinefelter syndrome.
e) About 1% of mentally retarded males have this syndrome.

11. Wolfram syndrome includes all of the following **except**:
a) Deafness
b) Optic atrophy
c) Diabetes insipidus
d) Diabetes mellitus
e) Chromosome 5 involvement

12. An infant appears with an inverted V-shaped upper lip, thin cheeks, concave temporalis muscles, marrow head, and high-arched palate. The most likely diagnosis is:
a) Myotonic muscular dystrophy
b) Myotonic chondrodystrophy
c) Landouzy-Dejerine disease
d) Thomsen disease
e) Emery-Dreifuss muscular dystrophy

13. All of the following conditions can cause optic neuritis **except**:
a) Devic disease
b) Lead poisoning
c) Vincristine therapy
d) Corticosteroids
e) Bacterial meningitis

14. Alopecia areata is associated with all of the following conditions **except**:
a) Cataract
b) Atopy
c) Hashimoto thyroiditis
d) Nail dystrophy
e) Hyperadrenalism

15. A 15-year-old boy appears with swelling, tenderness, and increased prominence of the right tibial tubercle. He participated in high school sports. The following therapy is **not** beneficial in this condition:
a) NSAIDs
b) Rest
c) Restriction of activities
d) Knee immobilizer
e) Isometric exercise program

16. The following statement is **not** true about a poisoning in children:
a) The most common site of poisoning is home.
b) Most commonly occurs under 5 years of age.

c) Ingestion is the most common route of poisoning.
d) Majority of cases involve nondrug products.
e) Education regarding prevention of poisoning should be discussed in well-child visits, after a child is mobile.

17. The preferred oral therapy for an infection in human bite wounds is:
a) Penicillin
b) Doxycycline
c) Ciprofloxacin
d) Erythromycin
e) Amoxicillin-clavulanate

18. The preferred intravenous therapy for an infection in animal bite wounds is:
a) Cefotaxime
b) Ceftriaxone
c) Ciprofloxacin
d) Penicillin
e) Ampicillin and sulbactum

19. Normal glomerular filtration rate (GFR) in a full-term newborn **at birth** is:
a) 1-2 mL/min
b) 2-4 mL/min
c) 4-6 mL/min
d) 6-8 mL/min
e) 8-20 mL/min

20. Normal GFR in a full-term newborn by **2 to 3 days** of life is:
a) 4-6 mL/min
b) 6-8 mL/min
c) 8-20 mL/min
d) 20-30 mL/min
e) 30-50 mL/min

21. The GFR in a normal full-term infant reaches an adult value by:
a) 1-2 months of age
b) 3-5 months of age
c) 6-9 months of age
d) 9-12 months of age
e) 12-24 months of age

22. Pulmonary hypoplasia in newborns is most likely due to all of the following conditions **except**:
a) Potter syndrome
b) Oligohydramnios
c) Diaphragmatic hernia
d) Spinal cord lesions
e) Pneumothorax

23. The preferred therapy for patients with a chronic cholestasis without biliary obstruction is:
a) Kasai operation
b) Phenytoin
c) Discontinue fatty foods
d) Ursodeoxycholic acid
e) Gentamicin

24. A complication of using a hydrogen pump inhibitor (e.g., omeprazole, lansoprazole) is:
a) Acquired pyloric stenosis
b) Diarrhea
c) Vomiting
d) Gastroesophageal narrowing
e) Bacterial overgrowth

25. The usual site of obstruction in infants with an upper airway obstruction is:
    a) Larynx
    b) Trachea
    c) Nasopharynx
    d) Oropharynx
    e) Enlarged tongue

26. Tonsillectomy is indicated in all of the following conditions **except**:
    a) A patient who experienced six tonsillar infections that were treated with antibiotics in the preceding year.
    b) A patient who experienced five tonsillar infections that were treated with antibiotics in each of the preceding two years.
    c) A patient who experienced three tonsillar infections that were treated with antibiotics in each of the preceding three years.
    d) A patient who experienced four tonsillar infections that were treated with antibiotics in each of the preceding three years.
    e) A patient who experienced seven tonsillar infections that were treated with antibiotics in the preceding year.

27. The most common organism in patients with a empyema (purulent pleurisy) is:
    a) Staphylococcus aureus
    b) Group A Streptococcus
    c) Tuberculosis
    d) E. coli
    e) Streptococcus pneumoniae

28. The most common organism in patients with a post-traumatic empyema is:
    a) S. pneumoniae
    b) S. aureus
    c) E. coli
    d) Pseudomonas
    e) S. epidermidis

29. The most common cause of gross hematuria is:
    a) Urinary tract infections
    b) Meatal stenosis
    c) Trauma
    d) IgA nephropathy
    e) Glomerulonephritis

30. The most common cause of chronic glomerular disease is:
    a) IgA nephropathy
    b) SLE
    c) Glomerulonephritis
    d) Henoch-Schonlein purpura
    e) Reiter syndrome

31. The renal sonogram in a preterm infant reveals nephrocalcinosis. The most likely cause is:
    a) Intravenous calcium therapy
    b) Furosemide
    c) Gentamicin
    d) Vancomycin
    e) Hydrochlorthiazide

32. A child appears with a flank pain and microscopic hematuria. A diagnosis of urinary lithiasis is made. Suddenly, the child becomes asymptomatic. The most likely location of the stone is:
    a) Upper ureter
    b) Renal pelvis
    c) Lower ureter
    d) Urethra
    e) Urinary bladder

33. The most common presentation in patients with congenital hypothyroidism is:
    a) Umbilical hernia
    b) Constipation
    c) Jaundice
    d) Poor feeding
    e) Asymptomatic

34. The most newborn screening programs in USA measure the following parameter to rule out congenital hypothyroidism is:
    a) $T_3$
    b) $T_4$
    c) TSH
    d) TRH
    e) Free-$T_4$

35. The most common cause in newborns with 46, XX intersex and ambiguious genitalia is:
    a) Maternal use of testosterone during pregnancy.
    b) Aromatase deficiency
    c) Glucocorticoid receptor gene mutation
    d) Maternal ovarian androblastomas
    e) Congenital adrenal hyperplasias

36. The most common site of the vanishing testes in patients with XY gonadal agenesis syndrome is:
    a) Abdomen
    b) Scrotum
    c) Superficial inguinal ring
    d) Deep inguinal ring
    e) Inguinal canal

37. The cause of undescended testes in patients with a generalized myopathy is:
    a) Decreased dehydrotestosterone level
    b) Decreased testosterone level
    c) Weakness of the gubernaculum
    d) Absence of Y chromosome
    e) Weakness of the Y chromosome

38. The most frequent cause of toxic neuropathies in children is:
    a) Lead poisoning
    b) Organophosphates
    c) Vincristine
    d) Cisplatin
    e) Idiopathic

39. The most important risk factor in patients with a retinopathy of prematurity is:
    a) Hyperoxia
    b) Apnea
    c) Infection
    d) Hypoxia
    e) Prematurity

40. The first retinal sign in patients with a hypertensive retinopathy is:
    a) Edema
    b) Cotton-wool spots
    c) Flame-shaped hemorrhages
    d) Papilledema
    e) Generalized constrictions of retinal arterioles.

41. The most common organism in neonates with an acute otitis media is:
    a) S. aureus
    b) Streptococcus pneumoniae

c) Group B Streptococcus
d) Pseudomonas aeruginosa
e) Haemophilus influenzae

42. The most common organism in children with an acute otitis media is:
a) H. influenzae
b) S. aureus
c) P. aeruginosa
d) Moraxella catarrhalis
e) S. pneumoniae

43. Risk factors for otitis media include all of the following **except**:
a) Submucous cleft palate
b) Down syndrome
c) Low birthweight
d) Craniofacial anomalies
e) Unrepaired cleft palate

44. In a patient with ataxia-telangiectasia, telangiectasias first appear on:
a) Nasal bridge
b) Bulbar conjunctivae
c) External ears
d) Malar areas
e) Hard palate

45. The preferred therapy for patients with a pediculosis capitis is:
a) 1% of lindane shampoo (Kwell) for 10 minutes with a repeat application in 7-10 days.
b) Natural pyrethrin shampoo (RID) for 10 minutes with a repeat application in 7-10 days
c) A-200 Pyrinate liquid shampoo for 10 minutes with a repeat application in 7-10 days
d) 'Triple X' shampoo for 10 minutes with a repeat application in 7-10 days.
e) 0.5% malathione oris permethrin 1% cream rinse (Nix) applied for 10 minutes with a repeat application in 7-10 days.

46. The nail-patella syndrome includes all of the following **except**:
a) Dysplasia of nails
b) Absence of patella
c) Hypoplasia of quadriceps muscles
d) Spurs extending from iliac bones
e) Abnormalities of the elbow

47. A child appears with generalized pain, paraesthesias, and acral rashes. Rashes are pink, papular, and pruritic. Subsequently, rashes spread over the face. The child also has anorexia, diaphoresis, apathy, insomnia, and irritability. A physical examination reveals tachycardia, hypertension, tremors, and hypotonia of pectoral and pelvic girdles. The mother denies ingestion of a medication. The most likely diagnosis is:
a) Arsenic poisoning
b) Lead poisoning
c) Pink disease
d) Copper poisoning
e) Selenium poisoning

48. The preferred antidote in patients with a methanol poisoning is:
a) Ethanol
b) BAL
c) Deferoxamine
d) Lidocaine
e) N-acetylcysteine

49. The most common injury in daycare centers in USA is:
a) Rat bites
b) Traction hair loss

c) Human bites
d) Nursemaid's elbow
e) Slapped cheek redness

50. The American Academy of Pediatrics guidelines to reduce the risk of sudden infant death syndrome (SIDS) include all of the following **except**:
a) All infants should sleep in the supine position.
b) Infants should not sleep on the soft position.
c) Parents should not share a bed with the infant regardless of their smoking or drinking habit.
d) Infants should not be overbundled and overheated.
e) Home respiratory, cardiac, and oxygen saturation, monitoring are not recommended for all children.

51. The most common cardiovascular anomaly in patients with Alagille syndrome is:
a) Transposition of great vessels
b) VSD
c) ASD
d) Tetralogy of Fallot
e) Peripheral pulmonic stenosis

52. An initial therapy in infants with cholestatic jaundice is:
a) Phenobarbital
b) Gentamicin
c) Vitamin K
d) Vitamin A
e) Ursodeoxycholic acid

53. The most common foreign body in patients with aspiration is:
a) Popcorn
b) Dried beans
c) Sunflower seeds
d) Watermelon seeds
e) Nuts

54. A child appears with hemoptysis. A screening method includes all of the following tests except:
a) Complete blood counts
b) Chest x-ray
c) Prothrombin time
d) Chest CT scan
e) Partial thromboplastin time

55. The risk of recurrence of DiGeorge syndrome if a mother has 22q11 deletion is:
a) 4%
b) 10%
c) 25%
d) 50%
e) 66%

56. A 22q11 deletion is noted in the following syndrome:
a) Shprintzen syndrome
b) William syndrome
c) Alagille syndrome
d) Noonan syndrome
e) Holt-Oram syndrome

57. CATCH 22 acronym includes all of the following features **except**:
a) CNS defects
b) Abnormal facies
c) Thymic aplasia

d) Cleft palate
e) hypocalcemia

58. A newborn is diagnosed with a Shone complex. The following features are present in this newborn:
a) Right heart obstructive lesions
b) Left-sided cardiac obstructive lesions
c) Right-sided cardiac nonobstructive lesions
d) Left-sided nonobstructive lesions
e) Coarctation of the aorta

59. In a patient with hemoglobin H disease in alpha-thalassemia, the number of alpha-globin genes deletion is:
a) None
b) One
c) two
d) three
e) Four

60. The most common general adverse effect of radiotherapy is:
a) Alopecia
b) Nausea
c) Vomiting
d) Diarrhea
e) Dermatitis

61. The side effect of long-term use of corticosteroids is:
a) Infertility
b) Cataracts
c) Hepatoxicity
d) Scoliosis
e) Cardiomyopathy

62. A child appears with a raccoon eye. His mother denies history of trauma. The most likely diagnosis is:
a) Hepatoblastoma
b) Rhabdomyosarcoma
c) Non-Hodgkin lymphoma
d) Wilms tumor
e) Neuroblastoma

63. The following condition is **not** true about Dent disease:
a) Nephrolithiasis
b) Hypophosphatemia
c) Rickets
d) Autosomal dominant
e) X-linked

64. A therapy in patients with idiopathic hypercalcuria may include all of the following **except**:
a) Potassium citrate
b) Restriction of sodium
c) Hydrochlorthiazide
d) No restriction of dietary calcium
e) Dietary restriction of calcium

65. A 16-year-old boy appears in an ER with a painful, severe swelling of the penile shaft that he noticed after the sexual intercourse. The next step in management is:
a) Surgical exploration
b) Cold compress
c) Corticosteroids
d) Acetaminophen
e) Indomethacin

66. The conservative therapy for patients with a prolactinoma is:
   a) ACTH
   b) Radiotherapy
   c) Bromocriptine
   d) Transfrontal surgical resection
   e) Transsphenoidal surgical resection

67. The median age of sperm production is:
   a) 12 years
   b) 13 years
   c) 14 years
   d) 15 years
   e) 16 years

68. The average age at menarche in American girls is:
   a) 10-11 years
   b) 11-12 years
   c) 12.5-13 years
   d) 13.5-14 years
   e) 14.5-15 years

69. The most common karyotype in patients with a true gonadal intersex is:
   a) 46, XY
   b) 46, XX
   c) 46, XX / 46, XY
   d) 45, X
   e) Chi 46, XX / 46, XY

70. A child appears with diabetic ketoacidosis (DKA). Her weight is 40 kg. A therapy in first hour after admission may include all of the following **except**:
   a) A bolus of 400 mL of 0.9% sodium chloride solution
   b) Insulin drip 2 U/hour
   c) Intravenous mannitol 40 grams for cerebral edema
   d) Monitor input and output
   e) High-protein diet

71. A child is diagnosed with diabetic ketoacidosis. His weight is 40 kg. Initially, he received intravenous 400 mL of 0.9% Nacl in the first hour. The fluid requirement per hour for the next 23 hours is:
   a) 177 mL/hour
   b) 200 mL/hour
   c) 217 mL/hour
   d) 232 mL/hour
   e) 250 mL/hour

72. A surgical repair was performed in a newborn with the lumbosacral meningomyelocele. The newborn is receiving prophylactic antibiotics. The child is clinically stable. The most likely procedure needed for this child is:
   a) Surgical correction for the club foot
   b) Vesicostomy
   c) Ventriculoperitoneal shunt
   d) Pyelostomy
   e) Appendectomy

73. All of the following conditions may appear with a sensorineural hearing loss (SNHL) later in life **except**:
   a) Down syndrome
   b) Alstrom syndrome
   c) Turner syndrome
   d) von Recklinghausen disease
   e) Alport syndrome

74. The hallmark of all types of pediculosis is:
    a) Redness
    b) Scratch marks
    c) Papules
    d) Dark pimentations
    e) Pruritus

75. The most common type of ankle injury is:
    a) Foot planted with the medial malleolus of tibia moving toward the ground.
    b) Foot dorsiflexed with the elevation of the medial malleolus of tibia
    c) Foot dorsiflexed with the elevation of the lateral malleolus of fibula
    d) Foot planted with the lateral fibula moving toward the ground
    e) Foot planted with the medial malleolus of tibia and the lateral malleolus of fibula moving away from the ground

76. A 10-year-old boy appears with a pain in the right foot at the insertion of the Achilles tendon on the calcaneus. The pain is increased with walking and running. Management of this condition does **not** include:
    a) Massage
    b) heel lifts
    c) Hot compress
    d) Orthotics
    e) Stretching and strengthening of Achilles' tendon

77. A 16-year-old girl is brought to the ER by an ambulance. She is lethargic, drowsy, and unresponsive. She required intubation and mechanical ventilation. An empty bottle of amitriptyline was found in her room. She developed tachycardia, hypotension, and seizure activities. Management includes all of the following **except**:
    a) Physostigmine
    b) Sodium bicarbonate
    c) Activated charcoal
    d) Intravenous fluids
    e) Benzodiazepine

78. A 10-month-old appears with coughing, rhinorrhea, sneezing, mild respiratory distress, and fever (up to 102° F). A physical examination reveals wheezes, fine crackles, and prolonged expiratory phase of breathing. Management may include all of the following **except**:
    a) Humidified oxygen
    b) Ribavirin
    c) NPO
    d) Nebulized epinephrine
    e) RSV immune globulin

79. A surgical repair of the coarctation of aorta was performed in an infant. The next day after surgery, the infant developed vomiting, abdominal distension, bloody stools, hypertension, and leukocytosis. The most likely etiology is:
    a) Gastric ulcers
    b) Duodenal ulcers
    c) Intestinal perforations
    d) Gram-negative sepsis
    e) Mesenteric arteritis

80. A high-output cardiac failure occurs in the following condition:
    a) Myocarditis
    b) Constrictive pericarditis
    c) Large systemic arteriovenous fistulas
    d) Aortic stenosis
    e) Hypoplastic left heart syndrome

81. All of the following are complications of recombinant human erythropoietin therapy **except**:
    a) Seizures
    b) Hypotension
    c) Iron deficiency

d) Pure red cell aplasia
e) Clotting of vascular access

82. A 10-year-old boy appears with a gradual onset of pain in the left scrotum. A physical examination reveals a 'blue dot sign' on the left scrotum and a tender 4 mm mass on the upper pole of the left testis. The most likely diagnosis is:
a) Varicocele
b) Testicular torsion
c) Epididymitis
d) Testicular tumor
e) Torsion of the appendix testis

83. A 16-year-old girl appears with a recurrent multiple vulvar lesions for the last 3 days. All lesions are tender, each 1-10 mm in diameter, and have a grayish-yellow base. She denies sexual activities. The next step in management is:
a) Amoxicillin
b) Acyclovir
c) Nystatin
d) Erythromycin
e) Corticosteroids

84. A 3-year-old girl appears with menstruation and bilateral enlargement of breasts. A physical examination reveals hyperpigmentation, normal height, normal weight, and normal osseous age. The x-ray of face and skull usually reveals:
a) Prominent nasal bones
b) Thickening of the orbital bones
c) Premature eruption of teeth
d) Narrowing of the sinuses
e) Enlarged maxillary sinuses

85. The following statement is **not** true about autoimmune hypoparathyroidism:
a) Autosomal recessive
b) The gene is located on chromosome 21q22.
c) Hypoparathyroidism occurs after candidiasis
d) Addison disease occurs after hypoparathyroidism
e) Candidiasis occurs after Addison disease

86. A nutritional requirement for patients with type 1 diabetes mellitus include all of the following **except**:
a) About 30% of energy should come from proteins.
b) Less than 30% of energy should come from fats.
c) The percentage of energy derived from carbohydrate varies.
d) Less than 10% should be saturated fats.
e) The amount of fiber is more than 20 grams per day.

87. The most common associated abnormality in Dandy-Walker malformation is:
a) Cerebellar ataxia
b) Delayed motor developments
c) Agenesis of posterior cerebellar vermis
d) Agenesis of corpus callosum
e) Hydrocephalus

88. The initial preferred therapy for patients with mild migraine is:
a) Acetaminophen
b) Chlorpromazine
c) Ergotamine tartrate
d) Dimenhydrinate
e) Sumatriptan

89. A 4-year-old boy appears clumsy, falls easily, and trips over his own feet. A physical examination reveals stork like contour of the legs, wasted muscles of the anterior compartment of the legs, weakness in dorsiflexion of the lets, increased threshold for pain and temperature sensations. The preferred diagnostic study is:
a) Serum creatine kinase

b) CSF
c) Nerve conduction velocities
d) Electromyography
e) Sural nerve biopsy

90. The most common cause of hearing loss in children is:
a) Otitis externa
b) Otitis interna
c) Otitis media
d) Eighth cranial nerve defects
e) Rudimentary external ear

91. The most common cause of morbidity in patients with Marfan syndrome is:
a) Progressive aortic root dilatation
b) Scoliosis
c) Dislocated lens
d) Funnel chest
e) Progressive mitral valve prolapse

92. The most common cardiac defect in patients with Marfan syndrome is:
a) Aortic root dilatation
b) Aortic stenosis
c) Mitral valve prolapse
d) Mitral stenosis
e) Coarctation of aorta

93. A routine physical examination of a newborn reveals a sacral dimple. All of the following conditions increase the possibility of spinal dysraphism **except**:
a) The size is more than 5 mm
b) Associated with a mass
c) Associated with hair
d) Associated with a nevus flammeus
e) The distance from the anus is 2 cm

94. A 1-year-old boy appears with scarlatiniform erythematous rash over the face, trunk, and extremities. He also has conjunctivitis, crusting and fissuring around mouth, nose, and eyes. An epidermis is easily separated in response to gentle force. The management includes all of the following **except**:
a) Topical antibiotics
b) Burow solution
c) Lubrication with emollient
d) Nafcillin
e) Correct electrolyte imbalance

95. A 2-year-old girl appears with a sudden onset of nausea, vomiting, diarrhea, and abdominal pain for the last 2 hours. Mother denies ingestion of medications. A physical examination reveals epigastric tenderness. An abdominal x-ray reveals radiopaque shadows in the left upper abdominal area. The preferred therapy is:
a) Sodium bicarbonate
b) N-acetylcysteine
c) EDTA
d) Fomepizole
e) Deferoxamine

96. A routine newborn physical examination reveals 'blueberry muffin' lesions on the skin. The most likely diagnosis is:
a) Pseudomonas sepsis
b) Leukemia
c) Neuroblastoma
d) Pheochromocytoma
e) Benign pustular melanosis

97. In full-term infants, iron-deficiency anemia solely due to an inadequate dietary iron intake occurs between:
    a) 1-3 months of age
    b) 3-6 months of age
    c) 6-9 months of age
    d) 9-24 months of age
    e) 24-30 months of age

98. A megaloblastic anemia due to folic acid deficiency occurs most commonly between:
    a) 1-3 months of age
    b) 4-7 months of age
    c) 8-11 months of age
    d) 12-15 months of age
    e) 16-20 months of age

99. In full-term infants, physiologic anemia usually develops after:
    a) 4 weeks of age
    b) 5 weeks of age
    c) 6 weeks of age
    d) 7 weeks of age
    e) 8 weeks of age

100. In preterm infants, physiologic anemia usually develops as early as:
    a) 2 weeks of age
    b) 3 weeks of age
    c) 4 weeks of age
    d) 5 weeks of age
    e) 6 weeks of age

101. A patient with bronchial asthma develops persistent atelactasis of the left lung. A combined therapy with bronchodilators and corticosteroids fails to improve an atelactasis. The preferred therapy is:
    a) Prone position
    b) Vigorous chest physiotherapy
    c) Vigorous suctioning
    d) N-acetylcysteine
    e) Recombinant human DNase (rhDNase)

102. A child is intubated for respiratory failure. An objective of mechanical ventilation is the following:
    a) Not to normalize arterial blood gas tension
    b) Not to maintain an adequate gas exchange
    c) Oxygen saturation should be maintained between 95-100%.
    d) Arterial $PCO_2$ should be maintained between 35-45 mm Hg.
    e) Arterial pH should be maintained between 7.35-7.45.

103. All of the following organisms cause acute pharyngitis in children **except**:
    a) Virus
    b) Group A beta-hemolytic Streptococcus
    c) Group C Streptococcus
    d) Haemophilus influenzae
    e) Arcanobacterium hemolyticum

104. The type of streptococcal pyrogenic exotoxins (SPE) strongly associated with scarlet fever is:
    a) SPE-A
    b) SPE-B
    c) SPE-C
    d) SPE-D
    e) SPE-E

105. The most common mode of inheritance in patients with Romano-Ward syndrome is:
    a) Autosomal recessive

b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

106. The sudden death in children is most commonly involved the following organ system:
a) CNS
b) Pulmonary
c) Cardiac
d) Gastrointestinal
e) Hepatic

107. The following factor reduces a risk of SIDS (sudden infant death syndrome):
a) Breast feeding
b) Prone (and side) sleep position
c) Pacifier (dummy) use
d) Male gender
e) Recent febrile illness

108. Risk of SIDS is highest between:
a) 0-1 month of age
b) 1-2 months of age
c) 2-4 months of age
d) 4-6 months of age
e) 6-9 months of age

109. Posteroanterior x-ray of a neck reveals a "steeple sign". The most likely diagnosis is:
a) Fracture clavicle
b) Fracture cervical vertebra
c) Croup
d) Laryngeal polyps
e) Tracheoesophageal fistula

110. Lateral x-ray of the upper airway in a 2-year-old boy reveals a "thumb sign". The most likely diagnosis is:
a) Laryngeal polyps
b) Epiglottitis
c) Subglottic hemangioma
d) Laryngeal edema
e) Subglottic stenosis

111. All of the following stool findings represent secretory diarrhea in a patient **except**:
a) pH is less than 5
b) Absence of reducing substance
c) Sodium contents are more than 70 mEq/L
d) Volume is more than 200 mL/day
e) Diarrhea continues despite fasting

112. All of the following stool findings represent osmotic diarrhea in a patient **except**:
a) pH is less than 5
b) Presence of reducing substance
c) Sodium contents are less than 70 mEq/L
d) Volume is more than 200 mL/day
e) Diarrhea stops in response to fasting

113. A child was diagnosed with an incarcerated inguinal hernia. The emergency surgery was performed. The following complication noted after incarceration of inguinal hernia is:
a) Scrotal necrosis
b) Cutaneous fistulas
c) Testicular hypertrophy

d) Hydrocele
e) Testicular atrophy

114. A preterm male infant is diagnosed with a right inguinal hernia. His present weight is 1400 grams. The hernia should be repaired when the infant weighs between:
a) 1400-1600 grams
b) 1600-1800 grams
c) 1800-2000 grams
d) 2000-2500 grams
e) 2500-3500 grams

115. The following statement is **not** true in patients with Aagenaes syndrome:
a) The chromosome 14 is involved.
b) Lymphedema of the lower extremities is present.
c) The patients are asymptomatic between episodes.
d) The patients have an intrahepatic cholestasis.
e) The patients have elevated liver enzymes, alkaline phosphatase, and bile acids during an episode.

116. All of the following findings are present in patients with a Byler disease **except**:
a) Failure to thrive
b) Steatorrhea
c) Pruritus
d) Presence of bile duct paucity
e) Low gamma-glutamyl transpeptidase levels

117. The first symptom noted in patients with a common cold is:
a) Nasal congestion
b) Cough
c) Fever
d) Sore throat
e) Runny nose

118. A 7-year-old boy appears with cough, mild fever, nasal obstruction, and rhinorrhea for the last 5 days. The symptoms began with sore throat about 7 days ago. The mother also noted a change in the color and consistency of the nasal secretions. A physical examination reveals a stuffy nose, swollen, erythematous nasal turbinates, and mildly injected throat. The next step in management is:
a) Amoxicillin
b) Erythromycin
c) Cefuroxime
d) Amoxicillin-clavulanate
e) Symptomatic therapy

119. A nasal secretion of a child reveals predominant polymorphonuclear leukocytes. The most likely diagnosis is:
a) Rhinovirus infection
b) Haemophilus influenzae infection
c) Allergic rhinitis
d) Moraxella catarrhalis infection
e) Group A beta-hemolytic Streptococcus infection

120. A nasal secretion of a child reveals predominant eosinophils. The most likely diagnosis is:
a) Rhinovirus infection
b) Streptococcus pneumoniae infection
c) Influenza virus infection
d) Respiratory syncitial virus
e) Allergic rhinitis

121. A 5 year-old-boy appears with a loss of language skills for the last 1 month. His mother also noted focal jerky movements of the upper and lower extremities. The child is irritable and has a poor attention span. He was developmentally normal prior to this episode. EEG studies are normal. EEG studies during sleep are also normal. He has a normal hearing. Head MRI and CT scans are normal. The position emission tomography (PET) scan result reveals a unilateral hypometabolism. The preferred therapy is:
    a) Phenobarbital
    b) Clobazam
    c) Phenytoin
    d) Carbamazepine
    e) Valproic acid

122. The preferred surgical therapy for patients with Landan-Kleffner syndrome is:
    a) Frontal lobectomy
    b) Thalamectomy
    c) Subpial transection
    d) Partial removal of the temporal lobe
    e) Partial removal of the parietal lobe

123. A newborn failed otoacoustic emissions (OAEs) testing. The next step in management is:
    a) CT scan of the internal ear
    b) MRI of the middle ear
    c) Myringotomy
    d) X-ray of the mastoid bone
    e) Auditory brainstem evoked responses (ABR)

124. The most common cause of orbital cellulitis in children is:
    a) Conjunctivitis
    b) Paranasal sinusitis
    c) Trauma
    d) Eyelid infections
    e) Nasolacrimal duct infections

125. A fundus examination of the child reveals a refractile, yellowish, multinodular cystic lesions arising from the optic disc. The most likely diagnosis is:
    a) Toxoplasmosis
    b) CMV
    c) Sturge-Weber syndrome
    d) Tuberous sclerosis
    e) von Recklinghausen disease

126. A measurement of hemoglobin $A_{1C}$ in a diabetic patient usually represents the blood glucose concentration:
    a) Preceding 1-2 months
    b) Preceding 2-3 months
    c) Preceding 3-6 months
    d) Preceding 6-9 months
    e) Preceding 9-12 months

127. A value of hemoglobin $A_{1C}$ is falsely elevated in the following condition:
    a) Sickle cell disease
    b) Iron deficiency anemia
    c) Polycythemia
    d) Chronic renal failure
    e) Thalassemia

128. A value of hemoglobin $A_{1C}$ is falsely reduced in the following condition:
    a) Physiologic anemia
    b) Iron deficiency anemia
    c) Folate deficiency
    d) Sickle cell disease
    e) Hereditary spherocytosis

129. The value of hemoglobin $A_{1C}$ in a patient is 5.8%. The most likely diagnosis is:
   a) Normal
   b) Well controlled diabetes
   c) Fair controlled diabetes
   d) Poor controlled diabetes
   e) Diabetes insipidus

130. The most common cardiac lesion in patients with a tuberous sclerosis is:
   a) VSD
   b) Hypopigmented myocardium
   c) Hypopigmented pericardium
   d) Rhabdomyomas
   e) ASD

131. The most common renal lesion in patients with a tuberous sclerosis is:
   a) Renal atrophy
   b) Acute glomerulonephritis
   c) Hamartomas
   d) Renal vein thrombosis
   e) Renal artery stenosis

132. A child is diagnosed to have a tuberous sclerosis. Suddenly, he appears with a pain in the right chest. A chest x-ray reveals right pneumothorax. The most likely associated underlying pulmonary finding is:
   a) Staphylococcal pneumonia
   b) Angiomyolipomas
   c) Pneumococcal pneumonia
   d) Tuberculosis
   e) Pulmonary hemorrhage

133. In a patient with Terson syndrome, retinal, subhyaloid, and vitreous hemorrhages are associated with:
   a) Intraventricular hemorrhages
   b) Subdural hemorrhages
   c) Epidural hemorrhages
   d) Brainstem hemorrhage
   e) Subarachnoid hemorrhages

134. A 12-year-old girl is admitted in PICU after a motor vehicle accident. She suffered from both head and chest injuries. An opthalmologic examination reveals retinal hemorrhages, cotton-wool spots, swollen discs, and decreased vision. The most likely diagnosis is:
   a) Retinitis pigmentosa
   b) Retinal detachment
   c) Pituitary hemorrhages
   d) Increased ADH secretion
   e) Purtscher retinopathy

135. The first laboratory abnormality noted in patients with familial hypophosphatemia is:
   a) Slightly reduced serum calcium levels
   b) Moderate reduced serum phosphate levels
   c) Increased urinary excretions of phosphate
   d) Elevated serum alkaline phosphatase activities
   e) Occasionally, elevated serum parathyroid hormone (PTH) is noted.

136. The clinical manifestation in patients with familial hypophosphatemia is:
   a) Tetany
   b) Pectus deformity
   c) Myopathy
   d) Rachitic rosary
   e) Bowing of lower extremities

137. The therapy in patients with a chronic pharyngotonsillitis and group A beta-hemolytic Streptococcal carrier includes all of the following **except**:
    a) Tonsillectomy
    b) Clindamycin
    c) Erythromycin
    d) Pencillin and rifampin
    e) Amoxicillin-clavulanate

138. A child appears with a drooling, trismus, unilateral throat pain, and ipsilateral referred otalgia. A physical examination reveals the right tonsil displaced medially and downward by the ipsilateral swollen palate and anterior tonsillar pillar. The preferred diagnostic study is:
    a) Throat culture
    b) ASLO titer
    c) CT scan of the affected area
    d) Lateral x-ray of the neck
    e) X-ray of maxillary sinuses

139. The preferred therapy for patients with a retropharyngeal or lateral pharyngeal abscess **without** respiratory distress is:
    a) Surgical drainage and penicillin
    b) Azithromycin and gentamicin
    c) A third-generation cephalosporin and penicillin
    d) Nafcillin and surgical drainage
    e) A third-generation cephalosporin and ampicillin-sulbactum

140. The preferred therapy for patients with a retropharyngeal or lateral pharyngeal abscess **with** respiratory distress is:
    a) Surgical drainage and penicillin
    b) Surgical drainage and ampicillin
    c) Surgical drainage and ampicillin-sulbactum
    d) Surgical drainage and clindamycin
    e) Surgical drainage and a third-generation cephalosporin and clindamycin

141. A child appears with a history of syncopal episode during exercise, fright, or sudden startle response. The preferred diagnostic study is:
    a) EEG
    b) Head CT scan
    c) Head MRI
    d) ECG
    e) Hearing test

142. An ECG finding in a patient reveals a heart-rate corrected Q-T interval is 0.49 second. The most likely diagnosis is:
    a) First-degree heart block
    b) Second-degree heart block
    c) Third-degree heart block
    d) Long Q-T syndrome
    e) Normal

143. A child appears with fainting spells. A physical examination reveals a normal neurological examination and positional (supine vs erect) character of murmur on the left sternal border near mitral area. The preferred therapy is:
    a) Prophylactic antibiotic
    b) Dilatation of the mitral valve
    c) Repair of VSD
    d) Repair of ASD
    e) Removal of myxomas

144. The most common location of cardiac myxomas is:
    a) Right atrium
    b) Left atrium
    c) Right ventricle

d) Left ventricle
e) Interventricular septum

145. All of the following conditions can cause a stress ulcer in infants **except**:
a) Sepsis
b) Respiratory insufficiency
c) Trauma
d) Overhydration
e) Cardiac insufficiency

146. The preferred diagnostic study in patients with an acute appendicitis is:
a) Plain abdominal x-ray
b) Barium enema
c) Upper GI series
d) Ultrasonography
e) CT scan

147. The following statement is **not** true about managing a patient with acute appendicitis:
a) Abdominal pain should not be treated with an intravenous morphine before diagnosis is confirmed.
b) Use of antibiotics in uncomplicated appendicitis can decrease postoperative wound infections.
c) Appendectomy should be performed within a few hours of estabilising diagnosis.
d) Laparoscopic appendectomy is associated with a rapid recovery and lower incidence of wound infection than that of an open appendectomy.
e) Laparoscopic surgery has an advantage over an open surgery in patients with an uncertain diagnosis, especially in adolescent females.

148. Clinical uses of pulmonary function testing (PFT) include all of the following **except**:
a) PFT usually makes the specific diagnosis.
b) PFT can detect an obstructive lung disease.
c) PFT can detect a restrictive lung disease.
d) PFT can detect a degree of functional impairment.
e) PFT is useful in a preoperative evaluation.

149. All of the following conditions are true in patients with a cystic fibrosis (CF) **except**:
a) Autosomal recessive
b) Chromosome 7
c) Chronic obstructive lung disease
d) Pancreatic insufficiency
e) The most prevalent mutation of the CF transmembrane regulator (CFTR) is the deletion of a single tyrosine residue at amino acid 508.

150. The most common cause of congenital heart disease is:
a) Chromosomal abnormalities
b) Maternal alcohol intake
c) Single gene mutation
d) Maternal drug intake
e) Unknown

151. A congenital heart disease is most common in the following condition:
a) Trisomy 21
b) Trisomy 18
c) Trisomy 13
d) Turner syndrome
e) Trisomy 22

152. All of the following heart diseases are more common in girls than that of boys **except**:
a) ASD
b) VSD
c) PDA

d) Pulmonic stenosis
e) Transposition of great vessels

153. The most common site of congenital lobar emphysema is:
a) Right upper lobe
b) Right middle lobe
c) Right lower lobe
d) Left upper lobe
e) Left lower lobe

154. A 12-year-old boy came for a routine physical examination. The boy is asymptomatic. The blood pressure recorded in the right upper extremity is 140/90. The blood pressure recorded in the left upper extremity is 138/88. The next step in management is:
a) Measure blood pressures in both lower extremities
b) ECG
c) Chest x-ray
d) Serum electrolytes
e) Liver function tests

155. The first sign of puberty in girls is:
a) Menarche
b) Increased height
c) Increased weight
d) Changes in voice
e) Breast bud

156. The first sign of puberty in boys is:
a) Ejaculation
b) Increased height
c) Enlarged penis
d) Enlarged testes
e) Changes in voice

157. In females, pubic hairs appear:
a) 1-6 months before appearance of breast buds
b) 6-12 months before appearance of breast buds
c) 1-6 months after appearance of breast buds
d) 6-12 months after appearance of breast buds
e) At the same time with appearance breast buds

158. In females, the following statement is true about the puberty:
a) At least one sign of puberty is present in approximately 95% of cases by 10 years of age.
b) At least one sign of puberty is present in approximately 95% of cases by 11 years of age.
c) At least one sign of puberty is present in approximately 95% of cases by 12 years of age.
d) At least one sign of puberty is present in approximately 97% of cases by 13 years of age.
e) At least one sign of puberty is present in approximately 98% of cases by 13 years of age.

159. All of the following conditions can occur secondary to overtreatment with L-thyroxine in patients with hypothyroidism **except**:
a) Hypoactivity
b) Craniosynostosis
c) Pseudotumor cerebri
d) Neurologic deficits
e) Developmental deficits

160. The following statement is **not** true about restrictive lung disease:
a) The duration of inspiration is increased.
b) The duration of expiration is reduced.
c) The chest x-ray reveals a decreased lung volume.
d) The physical examination reveals grunting and crackles.
e) The amplitude of respiratory movements is shallow.

161. All of the following statements are true about extrathoracic obstructive disease **except**:
    a) Duration of inspiration is reduced.
    b) Respiratory rate is decreased.
    c) Duration of expiration is unchanged.
    d) Physical examination reveals a inspiratory stridor.
    e) Chest x-ray findings are normal.

162. The following statement is **not** true about the intrathoracic obstructive lung disease **except**:
    a) Duration of inspiration is prolonged.
    b) Respiratory rate is either normal or increased.
    c) Duration of expiration is prolonged.
    d) A physical examination reveals expiratory wheezes.
    e) A chest x-ray reveals an increased lung volume.

163. The most common presentation in patients with a tracheal foreign body is:
    a) Wheezing
    b) Stridor
    c) Positive chest x-ray
    d) Choking and aspiration
    e) Positive soft tissue x-ray of the neck

164. A 2-month-old infant appears with a brassy cough. The most likely diagnosis is:
    a) Subglottic hemangioma
    b) Bronchiolitis
    c) URI
    d) Chlamydia infection
    e) Vascular ring

165. A child appears with a staccato cough. The most likely diagnosis is:
    a) Habit cough
    b) Subglottic hemangioma
    c) Laryngomalacia
    d) Croup
    e) Chlamydia pneumonitis

166. A 10-year-boy appears with a history of cough only during the daytime for the last 2 months. However, he sleeps well at night without coughing. The boy is coughing during the physical examination. A physical examination reveals a normal throat and clear breath sounds in both lungs. The most likely diagnosis is:
    a) Chlamydia infection
    b) Bronchial asthma
    c) Sinusitis
    d) Habit cough
    e) Carrier of group A Streptococcus

167. A congenital subglottic hemangioma is associated with the following anomaly:
    a) Renal
    b) CNS
    c) Liver
    d) Spleen
    e) Cutaneous

168. The most common complication of patients with a supracrystal VSD is:
    a) Right ventricular failure
    b) Left ventricular failure
    c) Pulmonic stenosis
    d) Aortic insufficiency
    e) Arrythmias

169. Noonan syndrome is associated with a mutation on:
    a) Chromosome 21
    b) Chromosome 12
    c) Chromosome X
    d) Chromosome Y
    e) Chromosome 15
170. The most common clinical presentation in patients with a mild or moderate Pulmonic stenosis is:
    a) Right ventricular failure
    b) Hepatic failure
    c) Tachypnea
    d) Tachycardia
    e) Asymptomatic

171. The most common cardiac lesion in patients with a rheumatic heart disease is:
    a) Mitral stenosis
    b) Aortic stenosis
    c) Aortic insufficiency
    d) Tricuspid stenosis
    e) Mitral insufficiency

172. The following medication does **not** cause folic acid deficiency:
    a) Methotrexate
    b) Pyrimethamine
    c) Phenytoin
    d) Phenobarbital
    e) Metronidazole

173. A child developed a hemolytic anemia. The blood smear reveals large number of spherocytes. However, Coombs test result is negative. A few years later, the child will develop clinical manifestations of the following disease:
    a) Sickle cell disease
    b) Wilson disease
    c) Thalassemia major
    d) Cystic fibrosis
    e) Asplenia

174. The most common primary malignant bone tumor in both children and adolescents is:
    a) Ewing sarcoma
    b) Chondrosarcoma
    c) Fibrosarcoma
    d) Rhabdomyosarcoma
    e) Osteosarcoma

175. The most common primary malignant bone tumor in children younger than 10 years of age is:
    a) Osteosarcoma
    b) Ewing sarcoma
    c) Chondrosarcoma
    d) Fibrosarcoma
    e) Rhabdomyosarcoma

176. The most common organism that causes peritonitis in patients with an idiopathic nephrotic syndrome is:
    a) E. coli
    b) Staphylococcus areus
    c) Pseudomonas aeruginosa
    d) Staphylococcus epidermidis
    e) Streptococcus pneumoniae

177. Lowe syndrome appears with all of the following clinical manifestations in infancy **except**:
    a) Retinoblastoma
    b) Hypotonia

c) Fanconi syndrome
d) Renal insufficiency
e) Progressive growth failure

178. The most common tumor of ovary is:
a) Dysgerminoma
b) Teratoma
c) Fibroma
d) Gonadoblastoma
e) Endodermal sinus tumor

179. The most common malignant tumor of ovary is:
a) Dysgerminoma
b) Malignant teratoma
c) Endodermal sinus tumor
d) Gonadoblastoma
e) Embryonal carcinoma

180. The preferred therapy in patients with a vaginal sarcoma botryoides is:
a) Radiotherapy
b) Chemotherapy
c) Radiotherapy and chemotherapy
d) Surgery
e) Repeat examination after 3 months

181. The most common gynecologic problem in female athletes is:
a) Vaginal discharge
b) Vulvar excoriation
c) Vulvar trauma
d) Amenorrhea
e) Vaginal trauma

182. A ballet dancer appears with an amenorrhea. Her twin sister started menstruation about 2½ years ago. Her twin sister is always busy with her academic activities. Their mother is worried. The next step in management is:
a) Serum LH levels
b) Serum FSH levels
c) Pelvic ultrasonography
d) MRI of the head
e) Follow-up visit after 6 months

183. The most common cause of gonadotropin-dependent precocious puberty is:
a) Hypothyroidism
b) Severe head trauma
c) Hydrocephalus
d) Hypothalamic hamartoma
e) Idiopathic

184. A 6-month-old boy appears with a virilization of the external genitalia for the last 2 weeks. His mother also appears with a virilization for the last 3 weeks. The boy is otherwise healthy. His birth weight was 7 lbs 6 ounces. He was born by NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. His father has been using a gel for hypogonadism. The most likely diagnosis is:
a) Congenital adrenal hyperplasia
b) Craniopharyngioma
c) McCune-Albright syndrome
d) Hypothalamic hamartoma
e) Medicational precocity

185. An increased risk of premature adrenarche can occur in patients with:
a) Premature appropriate for gestational age

b) Premature large for gestational age
c) Full-term large for gestational age
d) Postmature appropriate for gestational age
e) Full-term small for gestational age

186. A 7-year-old girl appears with hairs on the mons and labia majora. She has no axillary hairs. She is slightly advanced in height and osseous maturation. The most likely diagnosis is:
a) McCune Albright syndrome
b) Idiopathic precocious puberty
c) Hypothalamic hamartoma
d) Premature pubarche
e) Congenital adrenal hyperplasia

187. A 10-year-old boy is diagnosed with type 1 diabetes mellitus. He injects his own insulin. He noticed that he experienced less pain when injections are introduced at the same site. The most likely complication is:
a) Hypoglycemia
b) Localized erythema
c) Lipohypertrophy
d) Lipoatrophy
e) Vascular necrosis

188. A 4-year-old girl is diagnosed with **type 1** diabetes mellitus. She has no visual difficulties. The following statement is true about referral to an opthalmologist:
a) Opthalmologist should examine her immediately
b) Opthalmologist should examine her after 6 months.
c) Opthalmologist should examine her after 1 year.
d) Opthalmologist should examine her after 3 years.
e) Opthalmologist should examine her after 6 years.

189. A child is diagnosed with **type 2** diabetes mellitus. He has no visual difficulties. The following statement is true about referral to an opthalmologist:
a) Opthalmologist should examine him shortly after the diagnosis of diabetes.
b) Opthalmologist should examine him after 6 months.
c) Opthalmologist should examine him after 1 year.
d) Opthalmologist should examine him after 3 years.
e) Opthalmologist should examine him after 5 years.

190. A 6-year-old girl is diagnosed with type 1 diabetes mellitus. She has visual symptoms. The next step in management is:
a) Refer to an optometrist immediately.
b) Opthalmologist should examine her as soon as possible.
c) Opthalmologist should examine her after 6 months.
d) Opthalmologist should examine her after 1 year.
e) Opthalmologist should examine her after 4 years.

191. The child's neurological examination reveals a vertical nystagmus. The most likely diagnosis is:
a) Cerebellar dysfunctions
b) Optic nerve defects
c) Temporal lobe abnormalities
d) Brainstem dysfunctions
e) Occipital lobe tumors

192. All of the following conditions can cause horizontal nystagmus **except**:
a) Phenytoin
b) Cerebellar lesions
c) Phenobarbital
d) Peripheral labyrinth defects
e) A lesion of the vestibular system in brain stem

193. All of the following injuries can cause hypotonia **except**:
   a) Brainstem
   b) Cerebellum
   c) Cerebral hemispheres
   d) Spinal cord
   e) Anterior horn cells

194. A routine newborn physical examination reveals 5-10 beats of symmetric clonus in the lower extremities by sudden dorsiflexion of the foot when the knee is partially flexed. The next step in management is:
   a) MRI of the brain
   b) CT scan of the head
   c) EEG
   d) Electromyography
   e) Reassurance

195. The following primitive reflex persists throughout life:
   a) Moro
   b) Tonic neck
   c) Rooting
   d) Palmer grasp
   e) Parachutte

196. The first step in management of epilepsy is:
   a) EEG should be performed immediately.
   b) Head MRI should be performed when the child is stable.
   c) Head CT scan should be arranged as soon as possible.
   d) Spinal tap should be performed when the child is stable.
   e) To make sure that the child has a seizure disorder.

197. The patients with a Tay-Sachs disease have the following biochemical defect:
   a) Hexosaminidase A and B
   b) Neuraminidase
   c) Beta-galactosidase
   d) Galactocerebrosidase
   e) Hexosaminidase A

198. The mode of inheritance in all of the following neurodegenerative disorders is an autosomal recessive **except**:
   a) $GM_1$ gangliosidosis
   b) Tay-Sachs disease
   c) Krabbe disease
   d) Sialidosis
   e) Adrenoleukodystrophy

199. A routine physical examination of the newborn reveals aniridia. The following investigation indicated in this patient is:
   a) Renal ultrasonography
   b) Head MRI
   c) VCUG
   d) ECG
   e) Bone scan

200. The chromosomal defect in patients with aniridia is:
   a) Trisomy 21
   b) Trisomy 18
   c) Chromosome 15
   d) Partial deletion of the short arm of chromosome 11
   e) Partial deletion of the long arm of chromosome 11

201. A 2-month-old child came for a routine physical examination. The syrup of ipecac and a telephone number of a local poison control center should be given at:
a) 3 months of age
b) 6 months of age
c) 9 months of age
d) 12 months of age
e) 15 months of age

202. An infant can sit without support. The most likely age of this infant is:
a) 5 months
b) 6 months
c) 7 months
d) 8 months
e) 9 months

203. A child can build a tower of two cubes. The most likely age of this child is:
a) 12 months
b) 15 months
c) 18 months
d) 20 months
e) 24 months

204. A child can speak 10-15 words. The most likely age of this child is:
a) 12 months
b) 15 months
c) 18 months
d) 20 months
e) 24 months

205. A child pretends a play with doll. The most likely age of this child is:
a) 12 months
b) 15 months
c) 17 months
d) 20 months
e) 24 months

206. All of the following statements are true about Brazelton Neonatal Behavioral Assessment scale (NBAS) **except**:
a) NBAS is a good predictor of future developments.
b) NBAS estimates neurologic intactness.
c) NBAS estimates adaptation to a extrauterine life.
d) NBAS estimates interactive capacities.
e) NBAS estimates primitive reflexes.

207. A 12-year-old girl appears with a sudden onset of blindness in both eyes for the last 12 hours. She attended a party in her friend's house in the previous night. In the following morning, she could not see anything. A physical examination reveals a normal pupillary reflex and fundus examination. Her mother became blind secondary to a glaucoma about 6 months ago. The most likely diagnosis is:
a) Acquired glaucoma
b) Conversion disorder
c) Retinal hemorrhages
d) Retinitis pigmentosa
e) Retrobulbar neuritis

208. A 4-year-old boy appears with a history of enuresis for the last 2 months. He has been voiding twice a week. The boy was asymptomatic prior to this episode. His growth and development are normal. The preferred therapy is:
a) Imipramine
b) DDAVP
c) Bed and pad alarm systems

d) Psychotherapy
e) Reassurance

209. The side effect of imipramine is:
a) Arrythmias
b) Hypertension
c) Excessive salivation
d) UTI
e) Alertness

210. The hours per night sleep necessary for adolescents are:
a) 6 hours
b) 7 hours
c) 8 hours
d) 9 hours
e) 10 hours

211. Munchausen syndrome by proxy (MSBP) may include all of the following **except**:
a) A mother is very concerned about a child's condition.
b) A mother fabricates a medical history.
c) A mother may have a background in health care.
d) A mother may alter laboratory samples.
e) A child may be exposed to physical abuse, toxin, medication, or infectious agents.

212. The most common clinical manifestation in neonates with early onset group B Streptococcus (GBS) infections is:
a) Pneumonia
b) Meningitis
c) Sepsis
d) UTI
e) Asymptomatic bacteremia

213. The most common clinical manifestation in infants with late onset group B Streptococcus (GBS) infections is:
a) Meningitis
b) Bacteremia
c) Pneumonia
d) Osteomyelitis
e) UTI

214. The most common type of group B Streptococcus (GBS) responsible for early or late-onset meningitis is:
a) Ia
b) Ib
c) II
d) III
e) V

215. All of the following serotypes are most commonly associated with neonatal GBS diseases **except**:
a) Ia
b) Ib
c) II
d) III
e) IV

216. The most common sexually transmitted disease noted in sexually abused children is:
a) Chlamydia
b) Syphilis
c) Gonorrhea
d) HIV
e) Herpes simplex virus

217. The most common site of primary genital gonorrhea in males is:
    a) Epidydimis
    b) Seminal vesicle
    c) Prostate
    d) Urethra
    e) Glans penis

218. The most common site of primary genital gonorrhea in postpubertal females is:
    a) Vulva
    b) Vagina
    c) Cervix
    d) Uterus
    e) Fallopian tube

219. The most common site of primary genital gonorrhea in prepubertal females is:
    a) Vulva-vagina
    b) Cervix
    c) Uterus
    d) Fallopian tube
    e) Anus

220. The preferred therapy in neonates with a gonococcal opthalmia is:
    a) Penicillin
    b) Ampicillin
    c) Gentamicin
    d) Cefotaxime
    e) Ceftriaxone

221. A purulent urethral discharge like gonococcus infections is usually produced by all of the following organisms except:
    a) Human herpes virus type 2
    b) Chlamydia trachomatis
    c) Mycoplasma hominis
    d) Trichomonas vaginalis
    e) Candida albicans

222. A group of adolescents appear with multiple skin lesions of folliculitis for the last 24 hours. They used a community swimming pool. Skin lesions are erythematous, macular, papular, and pustular. Skin lesions are noted predominantly over the truncal areas. The most likely cause of infection is:
    a) Candida albicans
    b) Staphylococcus aureus
    c) Staphylococcus epidermidis
    d) Human herpes virus
    e) Pseudomonas aeruginosa

223. A 24-week-gestational are preterm infant is placed on a mechanical ventilator. The infant is receiving a TPN (total parenteral nutrition) and intralipid through a central catheter. The most common organism associated with intravenous lipid infusions is:
    a) Pityrosporum ovale
    b) Pityrosporum orbiculare
    c) Staphylococcus epidermidis
    d) Malassezia furfur
    e) Group B Streptococcus

224. A group of children appears with a flulike symptoms such as cough, chest pain, headache, and fever. They usually play in the park that are contaminated with bird droppings. A physical examination reveals a hepatosplenomegaly. Majority of chest x-rays are normal but a few of them reveals a patchy bronchopneumonia. The most likely diagnosis is:
    a) Histoplasmosis infections
    b) Haemophilus influenzae infections
    c) RSV infections

d) Pseudomonas infections
e) Coccidioidomycosis infections

225. Medical personnel are more prone to acquire the following herpes infection:
a) Herpetic whitlow
b) Herpes gladiatorum
c) Genital herpes
d) Eczema herpeticum
e) Acute herpetic gingivostomatitis

226. Newborns acquire a herpes infection from their mothers. The most common time to acquire an herpes infection is:
a) First trimester
b) Second trimester
c) Third trimester
d) During delivery
e) During breast-feeding

227. Negri body is a characteristic of the following disease:
a) Herpes zoster infections
b) Herpes simplex virus infections
c) Rabies
d) CMV infections
e) Toxoplasmosis

228. A child is receiving an active immunization for a postexposure prophylaxis for rabies. The following therapy may suppress the response of an active immunization is:
a) Antibiotic therapy
b) Antiviral therapy
c) Antifungal therapy
d) Antimalarial therapy
e) Antiepileptic therapy

229. The most common fungal infection in HIV-infected children is:
a) Fungal genital infections
b) Oral candidiasis
c) Fungal scalp infections
d) Fungal bacteremia
e) Fungal UTI

230. The most common cause of bacterial pneumonia in HIV-infected children is:
a) H. influenzae
b) Moraxella catarrhalis
c) P. aeruginosa
d) E. coli
e) Streptococcus pneumoniae

231. The most common MRI finding in HIV-infected children with neurologic symptoms is:
a) Cerebellar atrophy
b) Cerebral atrophy
c) Leukomalacia
d) Periventricular calcifications
e) Diffuse calcifications

232. AIDS enteropathy is most likely due to the following reason:
a) Salmonella infections
b) Cryptosporidium infections
c) CMV infections
d) Candida infections
e) Direct HIV-infections

233. The most common renal manifestation in HIV-infected children is:
   a) Microscopic hematuria
   b) Gross hematuria
   c) E. coli UTI
   d) Fungal UTI
   e) Nephrotic syndrome

234. The following infection can produce a typical Reye syndrome:
   a) CMV
   b) Herpes simplex virus
   c) Rotavirus
   d) RSV
   e) Adenovirus

235. The most common clinical presentation in newborns with a rotavirus infection is:
   a) Necrotizing enterocolitis
   b) Intussuception
   c) Vomiting
   d) Diarrhea
   e) Asymptomatic

236. The following statement is **not** true in patients with a laryngeal papillomatosis:
   a) Lesions can turn into malignancy.
   b) Infants appear with an altered cry.
   c) Children appear with a hoarseness.
   d) A rapid growth can obstruct an upper airway.
   e) Lesions may require frequent surgeries.

237. The most prevalent viral sexually transmitted infection in USA is:
   a) Human herpes virus type 1
   b) Human papillomavirus
   c) Human herpes virus type 2
   d) CMV
   e) Rubella virus

238. The most common clinical presentation of human papillomavirus infection is:
   a) Laryngeal papillomatosis
   b) Skin warts
   c) Anal warts
   d) Vaginal warts
   e) Latent infections

239. The preferred therapy for patients with constipation in a first few months of life is:
   a) Milk of magnesia
   b) Prune juice
   c) Glycerine suppository
   d) Fruit juice
   e) Increased the amount of fluids

240. Most infants require 3 meals a day and one to two snacks by the end of:
   a) 6 months of age
   b) 1 year of age
   c) 15 months of age
   d) 18 months of age
   e) 24 months of age

241. A child can hold a bottle by:
   a) 5 months of age
   b) 6 months of age

c) 7 months of age
d) 8 months of age
e) 9 months of age

242. A child can hold a cup by:
a) 6-7 months of age
b) 7-8 months of age
c) 8-9 months of age
d) 9-10 months of age
e) 11-12 months of age

243. Children can feed themselves by the end of:
a) 18 months of age
b) 24 months of age
c) 30 months of age
d) 36 months of age
e) 48 months of age

244. Moderately active 4-6 years old children need:
a) 1,200 Kcal/day
b) 1,400 Kcal/day
c) 1,600 Kcal/day
d) 2,000 Kcal/day
e) 2,400 Kcal/day

245. Moderately active 6-10 years old children need:
a) 2,000 Kcal/day
b) 2,200 Kcal/day
c) 2,400 Kcal/day
d) 2,600 Kcal/day
e) 2,800 Kcal/day

246. Active teenage boys need:
a) 2,400 Kcal/day
b) 2,600 Kcal/day
c) 2,800 Kcal/day
d) 3,000 Kcal/day
e) 3,200 Kcal/day

247. A child appears with nausea, diarrhea, polyuria, weight loss, and nocturia. The most likely diagnosis is:
a) Vit A toxicity
b) Vitamin A deficiency
c) Vit D toxicity
d) Vit K deficiency
e) Niacin toxicity

248. A child appears with alopecia, drying skin, slow growth, hepatosplenomegaly, increased intracranial pressure, painful and swollen long bones. The most likely diagnosis is:
a) Vitamin $B_{12}$ toxicity
b) Vitamin $B_6$ toxicity
c) Niacin deficiency
d) Vitamin E toxicity
e) Vitamin A toxicity

249. Breast-fed infants should receive iron supplementation by:
a) 1-2 months of age
b) 2-4 months of age
c) 4-6 months of age
d) 6-9 months of age
e) 9-12 months of age

250. The following component in breast milk can inhibit the synthesis of E. coli in intestine:
   a) Secretory IgA
   b) Complement
   c) Lysozyme
   d) Lactoferrin
   e) Viral antibodies

251. A breast milk can be stored in the refrigerator for up to:
   a) 6 hours
   b) 12 hours
   c) 24 hours
   d) 36 hours
   e) 48 hours

252. A breast milk can be stored in the freezer for up to:
   a) 7 days
   b) 14 days
   c) 21 days
   d) 30 days
   e) 45 days

253. In newborn infants, gas should normally be present in the rectum on x-ray by:
   a) At birth
   b) 6 hours of age
   c) 12 hours of age
   d) 24 hours of age
   e) 48 hours of age

254. In newborn infants with a congenital heart disease, the chance that a murmur heard at birth is:
   a) 1/2
   b) 1/4
   c) 1/8
   d) 1/12
   e) 1/25

255. Omphaloceles are associated with all of the following **except**:
   a) Conjoined twins
   b) Trisomy 18
   c) Meningomyelocele
   d) Imperforate anus
   e) Down syndrome

256. A routine newborn physical examination reveals an erection of the penis. His central venous hematocrit is 58. The most likely cause is:
   a) Polycythemia
   b) Overhydration
   c) Pituitary adenoma
   d) Penile trauma
   e) Nothing significant

257. A newborn female appears with a redundant skin in neck. The most likely diagnosis is:
   a) Down syndrome
   b) Hemangioma
   c) Turner syndrome
   d) William syndrome
   e) Pradder-Wille syndrome

258. A 2-day-old newborn female appears with a clusters of white and yellow follicles, and ulcers on an erythematous base noted on the anterior tonsillar pillars. The baby was not suctioned after the delivery. The most likely cause is:
a) Trauma during suctioning
b) Bacterial infections
c) Viral infections
d) Fungal infections
e) Unknown

259. A newborn routine physical examination reveals leukokoria. The next step in management is:
a) Repeat eye examination after 24 hours.
b) Immediate opthalmologic consultation
c) MRI of eye
d) CT scan of eye
e) Opthalmologic examination after 7 days

260. All of the following conditions can manifest with a white pupillary reflex **except**:
a) Infantile glaucoma
b) Cataract
c) Chorioretinitis
d) Tumor
e) Retinopathy of prematurity

261. The breathing sound of a normal newborn is:
a) Bronchiolar
b) Alveolar
c) Bronchoalveolar
d) Mildly transmitted nasal sounds
e) Mildly transmitted nasopharyngeal sounds

262. All of the following conditions can cause metabolic acidosis **except**:
a) Vomiting
b) Diarrhea
c) Hypoxia
d) Diabetic ketoacidosis
e) Secondary renal insufficiency

263. Most firearm related deaths occur in:
a) Schools
b) Streets
c) Homes
d) Trains
e) Airports

264. Most common means of suicide in males of all ages is:
a) Knives
b) Firearms
c) Motor vehicle accidents
d) Drugs
e) Alcohols

265. Most common means of suicide in females of all ages is:
a) Knives
b) Alcohols
c) Drugs
d) Firearms
e) Motor vehicle accidents

266. The most common cause of homicide in males is:
a) Sticks

b) Knives
c) Baseball bats
d) Chains
e) Handguns

267. Immediate complications of central venous catheters include all of the following **except**:
a) Pneumothorax
b) Dysrythmias
c) Hemothorax
d) Hydrothorax
e) Infection

268. The most serious acute or delayed complication of central venous catheter is:
a) Hemothorax
b) Pneumothorax
c) Hydrothorax
d) Cardiac tamponade
e) Pulmonary embolism

269. A 8-year-old boy is admitted with a severe asthma attack. He did not respond to conventional therapies. Physicians are preparing to intubate the child. The appropriate size of Endotracheal tube (ETT) is:
a) 16 mm
b) 17 mm
c) 18 mm
d) 19 mm
e) 20 mm

270. A child is admitted in a pediatric intensive care unit (PICU) with a shock. A central venous catheter (CVP) is placed. His cardiac output (CO) is increased, systemic vascular resistance (SVR) is decreased, mean arterial pressure (MAP) is normal, wedge pressure (WP) is decreased, and central venous pressure (CVP) is decreased. The most likely diagnosis is:
a) Hypovolemic shock
b) Cardiogenic shock
c) Distributive shock
d) Early septic shock
e) Obstructive shock

271. All of the following conditions decrease cardiac output (CO) **except**:
a) Hypovolemic shock
b) Late septic shock
c) Distributive shock
d) Systolic cardiogenic shock
e) Obstructive shock

272. All of the following conditions increase systemic vascular resistance (SVR) **except**:
a) Hypovolemic shock
b) Obstructive shock
c) Septic shock
d) Systolic cardiogenic shock
e) Diastolic cardiogenic shock

273. All of the following conditions increase central venous pressure (CVP) **except**:
a) Early septic shock
b) Late septic shock
c) Obstructive shock
d) Systolic cardiogenic shock
e) Diastolic cardiogenic shock

274. Mean arterial pressure (MAP) is always decreased in the following condition:
a) Late septic shock
b) Hypovolemic shock

c) Cardiogenic shock
d) Obstructive shock
e) Early septic shock

275. The most common cause of acute respiratory distress syndrome (ARD'S) is:
a) Infectious pneumonia
b) Acute chest syndrome
c) Fat emboli
d) Inhalation injuries
e) Aspiration of gastric contents

276. In USA, drowing is the most common in the following age group:
a) Less than 1 year of age
b) 1-4 years of age
c) 5-9 years of age
d) 10-14 years of age
e) 15-19 years of age

277. Bathtub drowning is the most common in the following age group:
a) 1-6 months of age
b) 7-15 months of age
c) 16-24 months of age
d) 25-36 months of age
e) 37-48 months of age

278. The most common cause of bathtub drowning is:
a) Bathtub water is very cold.
b) Bathtub water is very hot.
c) Children with a chronic lung disease
d) Inadequate supervision
e) Children who were born premature and required mechanical ventilation in NICU.

279. The most common site of drowning in children under 1 year of age is:
a) Bathtub
b) Swimming pool
c) Pond
d) Lake
e) Ocean

280. The most common site of drowning in children who are 1-4 years of age is:
a) Bathtub
b) Pond
c) Ocean
d) Lake
e) Swimming pool

281. The most common site of drowning in children (5-9 years of age), young adolescents (10-14 years of age), and older teenagers (15-19) of age) is:
a) Freshwater
b) Ocean
c) Spa
d) Private swimming pool
e) Community swimming pool

282. All of the following statements are true about residential pool submersion events except:
a) Most submersion events occur when there is a lack of supervision over 15 minutes.
b) Most submersion events occur at the child's own home.
c) Most submersion events occur within the first 6 months of pool exposure.

d) In warmer climate, majority (50-90% of cases) of drowning deaths occur in residential swimming pools.
e) Majority of children are hospitalized for at least 24 hours.

283. A child is brought to a ER with a moderate to severe burn injury. A physical examination reveals wheezing and 40% burn over the body and face. He is unresponsive. All of the following therapies are indicated **except**:
a) Endotracheal intubation and 100% oxygen therapy
b) Beta-agonist aerosols therapy
c) Pulmonary toileting and chest physiotherapy
d) Tracheostomy is indicated if the child required a mechanical ventilation over one month.
e) Nitric oxide therapy (5-30 ppm) may be useful in severe cases.

284. EMLA is used locally for a circumcision in a neonate. The following complication may occur:
a) Tachycardias
b) Sedations
c) Bradycardias
d) Arrythmias
e) Blisters

285. The advantages of FISH (fluorescence in situ hybridization) include all of the following **except**:
a) FISH is used as a screening tool.
b) FISH can analyze a large number of cells rapidly.
c) FISH can analyze uncultured and nondividing cells.
d) FISH has a high sensitivity.
e) FISH has a high specificity.

286. All of the following are characteristics of autosomal dominant inheritance **except**:
a) Affected individuals are present in every generation.
b) Males and females are equally affected.
c) Phenotypically normal family members can transmit the disease to their children.
d) A child of an affected parent has a 50% chance of inheriting the disease.
e) A significant proportion of cases are due to a new mutation.

287. All of the following are features of Klinfelter syndrome **except**:
a) Gynecomastia
b) Short stature
c) Small testes
d) Azoospermia
e) Infertility

288. All of the following are features of Chediak-Higashi syndrome **except**:
a) Autosomal dominant
b) Partial albinism
c) Mutation the long arm of chromosome 1
d) Susceptibility to infections
e) Lymphoproliferative cancers

289. A 5-day-old male appears with a poor feeding and vomiting for the last 24 hours. He was born by a NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. He went home 2 days after the delivery. A physical examination reveals lethargy, hypertonicity, muscular rigidity, and opisthotonos. A full sepsis work up administered. The boy reveals a flaccidity between hypertonicities. The CBC and SMA6 are normal. The boy has a mild metabolic acidosis. The most likely diagnosis is:
a) Maple syrup urine disease
b) Phenylketonuria
c) Mathylmalonic acidemia
d) Hyperglycinemia
e) Hyperammonemia

290. The enzyme deficiency in Tay-Sachs disease is:
a) Lysosomal hydrolase
b) Alpha-galactosidase A

c) Beta-galactosidase
d) Beta-hexosaminidase A isozyme
e) Beta-hexosaminidase A and B isozymes

291. The enzyme deficiency in Sandhoff disease is:
a) Glucose-6-phosphatase
b) Acid maltase
c) Liver phosphorylase
d) Pyruvate dehydrogenase
e) Beta-hexosaminidase A and B isozymes

292. All of the following are major causes of mortality in full term infants **except**:
a) Congenital anomalies
b) Birth asphyxia
c) Meconium aspiration pneumonia
d) Persistent pulmonary hypertension
e) Necrotizing enterocolitis

293. A newborn physical examination reveals a third fontanel. The most likely diagnosis is:
a) Turner syndrome
b) Birth trauma
c) Noonan syndrome
d) Down syndrome
e) Craniosynostosis

294. All of the following conditions cause a small anterior fontanel except:
a) Achodroplasia
b) Microcephaly
c) Craniosynostosis
d) Wormian bones
e) Congenital hyperthyroidism

295. All of the following conditions cause a large anterior fontanel **except**:
a) Congenital rubella syndrome
b) Apert syndrome
c) Russell-Silver syndrome
d) Kenny syndrome
e) Klinefelter syndrome

296. A routine fetal monitoring reveals an early deceleration. The most likely diagnosis is:
a) Cord compression
b) Head compression
c) Intrauterine infection
d) Hypoxemia
e) Maternal hypotension

297. A routine fetal monitoring reveals a variable deceleration. The most likely diagnosis is:
a) Hypoxia
b) Excessive uterine activity
c) Intrauterine infection
d) Maternal hypotension
e) Cord compression

298. A routine fetal monitoring reveals a late deceleration. The most likely diagnosis is:
a) Hypoxemia
b) Bacterial infection
c) CMV
d) Herpes simplex virus infection
e) Lupus

299. A routine newborn physical examination reveals cleft palate. The following medication can cause this anomaly:
   a) Carbamazepine
   b) Thalidomide
   c) Lithium
   d) Phenytoin
   e) Prednisone

300. A routine newborn physical examination reveals a cutis laxa syndrome. The following medication ca cause this anomaly:
   a) Penicillamine
   b) Valproate
   c) Warfarin
   d) Accutane
   e) Trimethadione

301. A newborn appears with a limb reduction. The most likely cause is:
   a) Maternal alcohol intake
   b) Chorionic villus sampling
   c) Streptomycin
   d) Maternal toluene intake
   e) Maternal cocaine use

302. The lecithin: sphingomyelin (L : S) ratio is 2 :1 by:
   a) 34 weeks of gestational age
   b) 35 weeks of gestational age
   c) 36 weeks of gestational age
   d) 37 weeks of gestational age
   e) 38 weeks of gestational age

303. A pregnant mother has a monochorionic twin. The vascular anomaly noted that is called TRAP (twin reversed arterial perfusion) sequence. The preferred therapy is:
   a) Intrauterine transfusions
   b) Termination of both twin
   c) Intrauterine embolization
   d) Intrauterine use of a sclerosing agent
   e) Nd:YAG laser ablation

304. A full term, LGA (large for gestational age) infant was born by NSVD with a shoulder dystocia. The chills is not moving the left arm. The most likely position of the left arm is:
   a) Adduction and external rotation of the arm with supination of the forearm
   b) Abduction and external rotation of the arm with pronation of the forearm
   c) Adduction of the arm and pronation of the forearm
   d) Abduction of the arm and supination of the forearm
   e) Adduction and internal rotation of the arm with pronation of the forearm

305. A newborn is diagnosed with a congenital rubella syndrome. All of the following clinical features are present **except**:
   a) Mental retardation
   b) Hydrocephalus
   c) Cataracts
   d) Deafness
   e) Cardiovascular anomalies

306. A preterm infant is diagnosed to have a NEC (necrotizing enterocolitis). The infant appears with an abdominal distension and guiac-positive stools. The abdominal x-ray reveals a pneumatosis intestinalis. In most cases of NEC, the pathogen most commonly identified is:
   a) E. coli
   b) Klebsiella
   c) Clostridium perfringens
   d) S. epidermidis
   e) No organism

307. Maternal alcohol intake reduces the transfer of the following compotent through placenta to the fetus:
    a) Copper
    b) Iron
    c) Selenium
    d) Calcium
    e) Zinc

308. In Beckwith-Wiedemann syndrome, kidneys are enlarged along with liver. The most common cause of enlarged kidneys is:
    a) Unilateral polycystic kidney
    b) Multicystic kidneys
    c) Bilateral polycystic kidneys
    d) Bilateral UPJ obstructions
    e) Noncystic hyperplasia

309. Fetal alcohol syndrome (FAS) includes all of the following features **except**:
    a) Hypoactive behavior
    b) Microcephaly
    c) Developmental delay
    d) Facial abnormalities
    e) Optic nerve hypoplasia

310. Homologs of Drosophila developmental control genes cause all of the following conditions **except**:
    a) Townes-Brock syndrome
    b) Saethre-Chotzen syndrome
    c) Greig syndrome
    d) Prader-Willi syndrome
    e) Nevoid basal cell carcinoma syndrome

311. The most common organism associated with the first episode of late-onset sepsis in VLBW (very-low-birth-weight) infants is:
    a) S. aureus
    b) E. coli
    c) S. epidermidis
    d) Candida albicans
    e) Group B Streptococcus

312. All of the following statements are true about adolescents who attempt suicide **except**:
    a) Increased risk of morbidity in adolescents
    b) Increased risk of mortality in adolescents
    c) Increased risk of depression in adolescents
    d) Impaired academic skills in adolescents
    e) Most suicidal attempts are successful in adolescents.

313. A 14-year-old girl has a suicidal ideation. She told that to a close fried in the school. About 6 months ago, she attempted suicide but failed. At that time, she took a large number of acetaminophen tablets. She was admitted in the hospital at that time. She denies any substance abuse. She has problems with her boyfriend. The next step in management is:
    a) Notify to a school nurse
    b) Notify her parents
    c) Talk to her separately
    d) Talk to her boyfriend in a group meeting
    e) Refer to a psychiatrist immediately

314. A 16-year-old boy has a history of substance abuse. He has a suicidal ideation. His parents are divorced. His lives with his mother. He was previously seen by a psychiatrist for mood disorders. At present, he is not taking any medication. All of the following statements are true about treatments of a suicide attempt in adolescents **except**:
    a) A hospitalization always prevents a suicidal event in adolescents who attempted a suicide before.
    b) A hospitalization can help in an existing conflict.
    c) A hospitalization can provide a secure setting in which a patient can express his problem.
    d) A family should be educated about an adolescent suicidal behavior, therapy, and follow-up outpatient compliance.
    e) A crisis therapist should handle the case and communicate between the family and psychiatrist.

315. Which of the following substance is most commonly used in a lifetime by teenagers?
    a) Anabolic steroids
    b) MDMA (Ecstasy)
    c) Marijuana
    d) Alcohol
    e) Cigarettes

316. A 17-year-old boy appear in an ER with an euphoria, ataxia, hallucination, bizarre distortions of body image, and panic reaction. A physical examination reveals a nystagmus, hypersalivation, and normal respiration. During the physical examination, the boy experienced one episode of generalized convulsion. The ECG reveals cardiac arrythmias. The most likely diagnosis is:
    a) Cocaine use
    b) Amphetamine overdose
    c) Opiate overdose syndrome
    d) Volatile substance use
    e) Phencycline overdose

317. The therapy for a patients with phencycline (PCP) overdose may include all of the following **except**:
    a) Emesis
    b) Gastric lavage
    c) Diazepam
    d) Alkalization of the urine
    e) Hydration

318. A 16-year-old girl appears in an ER with an euphoria, increased motor activity, and decreased fatigabily. A physical examination reveals a hypertension, hyperthermia, tachycardia, and pupillary dilatation. The most likely diagnosis is:
    a) LSD overdose
    b) Alcohol intoxication
    c) Cocaine use
    d) Toluene intoxication
    e) Opiates withdrawal symptoms

319. A 15-year-old boy appears with yawning followed by insomnia, lacrimation, diarrhea, ‘goose flesh’, and cramping of the voluntary muscles. A physical examination reveals pupillary dilatations, tachycardia, and hyperactive bowel sounds. The next step in management is:
    a) Methadone
    b) Haloperidol
    c) Diazepam
    d) Naloxone
    e) Antidiarrheal medication

320. A 18-year-old girl appears with seizure activities, respiratory depressions, and cyanosis. A physical examination reveals miotic pupils, bilateral rales, and stupor. The chest x-ray reveals a pulmonary edema. The next step in management in addition to oxygen is:
    a) Diazepam
    b) Haloperidol
    c) Naloxone
    d) Methadone
    e) Phenothiazine

321. A 17-year-old boy appears in the early morning with a nausea, blurred vision, jaw clenching, and teeth grinding. He is very anxious, and experienced panic attacks and psychosis. He attended on all night dance party. The most likely diagnosis is:
    a) Cocaine use
    b) Toluene overdose
    c) Phencyclidine overdose
    d) Amphetamine overdose
    e) Methylenedioxymethamphetamine overdose

322. A 15-year-old girl appears a discharge from the left nipple for the last 7 days. The discharge is a thick, milky, and sticky. Her menstrual periods are normal. The next step in management is:
a) Mammogram
b) Ultrasonograph of the breast
c) Biopsy
d) Culture of the discharge
e) Reassurance

323. A 18-year-old girl appears with a smooth and well-defined mass in her right breast for the last 2 months. She noticed that during a shower. The mass did not change in size during a menstrual cycle. The most likely diagnosis is:
a) Lipoma
b) Fibroadenoma
c) Teratoma
d) Papilloma
e) Cyst

324. The most common organism in patients with a breast infection is:
a) S. aureus
b) S. epidermidis
c) E. coli
d) P. aeruginoma
e) S. pneumoniae

325. The following component is an important factor in the onset of menstruation and maintenance of ovulatory cycles:
a) Proteins
b) Carbohydrates
c) Fats
d) Vitamins
e) Minerals

326. All of the following medications can cause gynecomastia **except**:
a) Isoniazid
b) Ketoconazole
c) Metronidazole
d) Cyclophosphamide
e) Phenytoin

327. A 17-year-old girl is infected with a human papillomavirus in the genitalia. She is asymptomatic. The long-term complication of this infection is:
a) Uterine cancer
b) Cervical cancer
c) HIV infection
d) Herpes infection
e) Vaginal cancer

328. A 6-month-old boy appears with a diarrhea and skin infections for the last 1 month. He had 3 episodes of otitis media and was treated with antibiotics. He was admitted in a hospital twice for pneumonias. He was born full term, NSVD with a Apgar scores of 9 and 10 at 1 and 5 minutes respectively. The physical examination reveals a chronically ill child with a generalized skin infections. CBC reveals a WBC count is 9,800, hemoglobin is 10 g/dL, hematocrit is 30%, platelet count is 210,000, and absolute lymphocyte count is 1,900. The serum immunoglobulin levels are decreased and T-cells are severely reduced. The preferred therapy is:
a) INH
b) Acyclovir
c) Bone marrow transplantation
d) AZT
e) Amphotericin

329. A child appears with a rib cage abnormalities similar to a rachitic rosary, chondro-osseous dysplasia at the costochondral junctions, iliac bones, and vertebral bodies. CBC reveals an absolute lymphocyte count is 450/mm$^3$. The preferred therapy is:
a) High protein diet

b) Ceftriaxone
c) Ibuprofen
d) High calcium diet
e) Bone marrow transplantation

330. The most common organism causing recurrent skin and pulmonary infections in patients with a hyper IgE syndrome is:
a) Pseudomonas aeruginosa
b) S. aureus
c) S. epidermidis
d) E. coli
e) S. pneumoniae

331. The most common organism causing skin, mucous membranes, and respiratory tract infections in patients with a Chediak-Higashi syndrome is:
a) P. aeruginosa
b) S. epidermidis
c) E. coli
d) S. aureus
e) Candida albicans

332. The most common organism causing recurrent lymphadenitis, hepatic abscesses, and osteomyelitis at multiple sites in patients with a chronic granulomatous disease is:
a) S. aureus
b) Serratia marcescens
c) Burkholderia cepacia
d) Candida albicans
e) Salmonella

333. The following condition appears with a pancreatic insufficiency with fatty replacement, anemia, thrombocytopenia, and metaphyseal dysostosis:
a) Kostman syndrome
b) Chediak-Higashi syndrome
c) Hyper IgM syndrome
d) Cartilage-hair hypoplasia
e) Shwachman-Diamond syndrome

334. The best method for detection of allergen-specific IgE is:
a) Serum IgE levels
b) Blood eosinophilia
c) Eosinophils in nasal smear
d) Total serum immunoglobulin levels
e) Epicutaneous skin tests

335. A good asthma management means that almost all children with asthma can experience all of the following **except**:
a) Sleep well without disturbance due to a chronic cough
b) Attend school regularly
c) Participate fully in sports activities
d) Avoid severe exacerbations of asthma
e) Little or no adverse effects from asthma medications

336. The most common cause of childhood emergency department visits, hospitalizations, and missed school days is:
a) Gastroenteritis
b) Pneumonias
c) Asthma
d) Child abuse
e) Motor vehicle accidents

337. The following statement is **not** true about patients with an asthma:
a) All young children who experienced wheezing, a majority of them will develop asthma in later childhood.

- b) Monozygotic twins have a higher incidence of asthma than that of dizygotic twins.
- c) Majority of asthmatics have an onset of asthma before 6 years of age.
- d) A recurrent wheezing in early childhood is primarily due to a viral infection of the respiratory tract.
- e) A chronic asthma associated with an allergy that persists into later childhood and often adulthood.

338. The gold standard to measure airflow in asthma patients is:
   - a) Peak expiratory flow monitoring
   - b) Peak inspiratory flow monitoring
   - c) End-expiratory chest x-ray
   - d) Spirometry
   - e) Bronchoprovocation challenges

339. The specific antigen for patients with a drug-induced lupus is:
   - a) Histone
   - b) Ro/SSA
   - c) La/SSB
   - d) Pm-Sci
   - e) Sm

340. The specific antigen for patients with a SLE is:
   - a) Sm
   - b) Ribonucleoprotein
   - c) Pm-Sci
   - d) Scl
   - e) La/SSB

341. Erythema nodosum is associated with all of the following diseases **except**:
   - a) Sarcoidosis
   - b) Tuberculosis
   - c) Yersinia
   - d) Coccidioidomycosis
   - e) Group B Streptococcus infection

342. All of the following conditions cause erythema nodosum **except**:
   - a) Phenytoin
   - b) Sulfonamides
   - c) Oral contraceptives
   - d) Ulcerative pharyngitis
   - e) Histoplasmosis

343. Sjogren syndrome is diagnosed by all of the following **except**:
   - a) Antibodies to Sm antigen
   - b) Antibodies to Ro/SSA antigen
   - c) Antibodies to La/SSB antigen
   - d) Biopsy of the lips
   - e) Anti-alpha-fodrin autoantibodies

344. The following organ most frequently affected in children with sarcoidosis is:
   - a) Kidneys
   - b) Lungs
   - c) Bones
   - d) Liver
   - e) Eye

345. The preferred diagnostic study in patients with a sarcoidosis:
   - a) Kveim test
   - b) Tissue biopsy
   - c) Opthalmologic examination

d) MRI of lungs
e) Elevated angiotensin-converting enzyme levels

346. The most common cardiac involvement in Kawasaki disease is:
a) Coronary artery aneurysms
b) Mitral regurgitation
c) Tricuspid regurgitation
d) Pericarditis
e) Myocarditis

347. The preferred therapy for patients with an acute stage of Kawasaki disease is:
a) Only aspirin
b) Only IVIG
c) Aspirin and IVIG
d) Warfarin and aspirin
e) Aspirin and dipyridamole

348. The preferred therapy for patients with a convalescent stage of Kawasaki disease is:
a) IVIG
b) Aspirin
c) Tissue plasminogen activator
d) Warfarin
e) Dipyridamole

349. The preferred therapy for patients with an acute coronary thrombosis secondary to a Kawasaki disease is:
a) Repeat IVIG (2 grams/Kg)
b) Aspirin (80-100 mg/Kg/day)
c) Aspirin and dipyridamole
d) Corticosteroids
e) Tissue plasminogen activator

350. The preferred long-term therapy for patients with coronary artery abnormalities secondary to a Kawasaki disease is:
a) Aspirin and warfarin
b) Dipyridamole
c) Streptokinase
d) IVIG
e) Aspirin and dipyridamole

351. A child is diagnosed with a Kawasaki disease. He received one dose of IVIG and several doses of aspirin. The child did not improve clinically. The next step in management is:
a) Aspirin (100 mg/kg/day)
b) Repeat IVIG (2 grams/kg)
c) Urokinase
d) Dipyridamole
e) Warfarin

352. A child with a Kawasaki disease did not respond to two doses of IVIG (2 grams/kg, each time) and several doses of aspirin therapy. The next step in management is:
a) Third dose IVIG (4 grams/kg)
b) Double of dose of aspirin
c) Tissue plasminogen activator
d) High dose of dipyridamole
e) Corticosteroids

353. A child is recovered from a Kawasaki disease. He is receiving a low-dose of aspirin therapy. The following vaccination can reduce the risk of Reye syndrome:
a) MMR
b) DtaP
c) IPV

d) Influenza vaccine
e) Varicella

354. A child is recovered from a Kawasaki disease after IVIG and aspirin therapies. The following vaccination should be delayed:
a) IPV
b) MMR
c) DTaP
d) Pneumococcal
e) Hepatitis B vaccine

355. Churg-Strauss syndrome includes all of the following except:
a) Destructive upper airway disease
b) Chronic sinusitis
c) History of asthma
d) Blood eosinophilia
e) Eosinophilic cutaneous vasculitis

356. The most common site of intussuception in patients with a Henoch-Schonlein purpura is:
a) Ileocolic
b) Colocolic
c) Jejunoileal
d) Duodenojejunal
e) Ileoileal

357. The definitive diagnostic study in patients with a Henoch-Schonlein purpura is:
a) Elevated serum IgA levels
b) Elevated serum IgM levels
c) Positive anticardiolipin antibodies
d) Positive antiphospholipid antibodies
e) Biopsy of skin lesions

358. A pulse rate can be low in the presence of fever in all of the following conditions **except**:
a) Drug fever
b) Typhoid
c) Brucellosis
d) Leptospirosis
e) S. aureus

359. A preterm infant is receiving total Parenteral nutrition and intralipid through a central line. Suddenly, the infant develops apnea, bradycardia, and mild abdominal distension. CBC and blood culture are performed. CBC reveals a normal WBC count (12,000) and low platelet count (75,000). A peripheral blood culture is positive for Candida albicans. The next step in management is:
a) Amphotericin
b) Fluocytosine
c) Remove the central line only
d) Repeat the blood culture
e) Amphotericin and removal of the central line

360. A preterm infant's peripheral blood culture is positive for S. epidermidis. She is NPO and receiving TPN and intralipid through a central line. She is in a stable condition. The next step in management is:
a) Nafcillin and remove the central line
b) Vancomycin and remove the central line
c) Remove the central line and give ampicillin
d) Repeat the blood culture and keep the central line
e) Vancomycin, repeat the blood culture, and keep the central line

361. All of the following conditions can occur due to a colonization of VA (ventriculoatrial) shunt **except**:
a) Shunt nephritis
b) Pulmonary hypertension
c) Septic pulmonary emboli

d) Infective endocarditis
e) CSF obtained from ventricular puncture is positive.

362. A full term newborn has a right ventriculoperitoneal (VP) shunt secondary to aqueductal stenosis. The infant developed bacterial meningitis. The organism is S. epidermidis. The preferred therapy is:
a) Nafcillin and remove the shunt
b) Vancomycin and keep the shunt
c) Removal of the shunt and vancomycin
d) Gentamicin and removal of the shunt
e) Cefotaxime and keep the shunt

363. The preferred therapy for patients with a VP shunt and wound infections (S. aureus) in the shunt area is:
a) Vancomycin and keep the shunt
b) Nafcillin and keep the shunt
c) Gentamicin and remove the shunt
d) Ampicillin and remove the shunt
e) Vancomycin and remove the shunt

364. All of the following 'skin' strains of group A Streptococcus are nephritogenic **except**:
a) M type 49
b) M type 52
c) M type 55
d) M type 57
e) M type 60

365. The following 'phayngeal strain of group A Streptococcus are nephritogenic:
a) My type 4
b) M type 9
c) M type 10
d) M type 12
e) M type 15

366. The most common organism in nonbullous or bullous impetigo in USA is:
a) S. aureus
b) Group A Streptococcus
c) S. pneumoniae
d) P. aeruginosa
e) S. epidermidis

367. A 9-year-old boy appears with a skin lesion over the pretibial area of the right leg. The lesion is swollen, red, tender, sharply defined, and slightly elevated border. He also has a fever and malaise. The most likely diagnosis is:
a) Impetigo
b) Cellulitis
c) Cutaneous TB
d) Insect bite
e) Erysipelas

368. The most common organism in patients with an erysipelas is:
a) S. aureus
b) S. pneumoniae
c) S. epidermidis
d) E. coli
e) Group A Streptococcus

369. The specific organism can be isolated in patients with an erysipelas by:
a) Skin culture
b) Blood culture
c) Throat culture

d) A rapid strep test
e) Culture obtained by needle aspirate of an affected area

370. The preferred therapy for patients with a vancomycin-resistent Enterococcus infection (e.g., E. faecium, E. faecalis) is:
a) Linezolid
b) Ceftriaxone
c) Ciprofloxacin
d) Ticarcillin
e) Quinupristin-dalfopristin

371. The most common organism in patients with a Gullain-Barre syndrome is:
a) Yersinia enterocolitica
b) Shigella
c) Salmonella
d) E. coli
e) Campylobacter jejuni

372. A child is diagnosed to have a bubonic plague. The child should be placed on isolation until:
a) 1 day after the onset of antibiotic therapy
b) 2 days after the onset of antibiotic therapy
c) 3 days after the onset of antibiotic therapy
d) 5 days after the onset of antibiotic therapy
e) 7 days after the onset of antibiotic therapy

373. The preferred therapy for patients with a bubonic plague is:
a) Intramuscular streptomycin
b) Intravenous streptomycin
c) Penicillin
d) Chloramphenicol
e) Tetracycline

374. The preferred therapy for patients with a septicemia or meningitis secondary to plague is:
a) Intravenous chloramphenicol
b) Intramuscular chloramphenicol
c) Intravenous streptomycin
d) Doxycycline
e) Trimethoprim-sulfamethoxazole

375. The preferred therapy for children over 9 years of age with a mild bubonic plague is:
a) Penicillin
b) Ampicillin
c) Chloramphenicol
d) Erythromycin
e) Trimethoprim-sulfamethoxazole

376. A 9-year-old boy is admitted for a pneumonic plague. He has an older brother and sister at home. The recommended prophylactic therapy for close contacts of patients with a pneumonic plague is:
a) 2-day course of tetracycline
b) 3-day course of doxycycline
c) 5-day course of trimethoprim-sulfamethoxazole
d) 7-day course of doxycycline
e) 10-day course of Ciprofloxacin

377. A 12-year-old girl appears with a bubonic plague. She has three younger siblings at home. The girl has an uncomplicated disease. The recommended prophylactic therapy for all siblings is:
a) 9-year-old sibling should receive doxycycline
b) 7-year-old sibling should receive penicillin
c) 4-year-old sibling should receive erythromycin

d) All of them should receive trimethoprim-sulfamethoxazole
e) No therapy is indicated.

378. A 12-year-old boy appears with a persistent cough, fever, and sore throat for the last 2 weeks. Initially, cough was nonproductive. For the last few days, he developed a frothy, white sputum. A physical examination reveals a fine crackles or rales. The chest x-ray reveals a bilateral lower lobes infiltrate. The preferred therapy is:
a) Ceftriaxone
b) Cefotaxime
c) Clindamycin
d) Clarithromycin
e) Ciprofloxacin

379. A child appears with several skin lesions over the boy. The lesions are erythema multiforme. The most likely diagnosis is:
a) Candida infections
b) Chlamydia infections
c) Herpes simplex virus infections
d) Stevens-Johnson syndrome
e) Histoplasmosis infections

380. A child appears with scattered vesicular lesion on the tongue, buccal mucosal, gum, palate, and posterior pharynx. Some ulcerative lesions surrounded by erythema are also noted. She also has maculopapular, vesicular, and pustular lesions over he hands, fingers, and feet. The most likely organism is:
a) Human herpes virus type 1
b) Coxsackievirus A 16
c) Candida albicans
d) Group A Streptococcus
e) Enterovirus 70

381. The most common organism in patients with a **severe form** of hand-foot-and-mouth disease is:
a) Coxsackievirus A 16
b) Coxsackievirus B 5
c) Coxsackievirus A 5
d) Coxsackievirus B 2
e) Enterovirus 71

382. The most common cause of viral meningitis in mumps-immunized patients is:
a) Enteroviruses
b) Human herpes virus type 1
c) Human herpes virus type 2
d) Measles virus
e) CMV

383. A child appears with fever, sore throat, and abdominal pain. A physical examination reveals generalized lymphadenopathies and splenomegaly. The child was treated with an antibiotic and developed rashes all over the body. The most likely antibiotic that was used for this patient is:
a) Azithromycin
b) Erythromycin
c) Chloramphenicol
d) Ampicillin
e) Trimethoprim-sulfamethoxazole

384. Alice in Wonderland syndrome may be a complication of the following infection:
a) CMV
b) Toxoplasma gondii
c) HIV
d) Hepatitis B virus
e) Epstein-Barr virus

385. The most serious complication in patients with a EBV infectious mononucleosis is:
    a) Myocarditis
    b) Hemolytic anemia
    c) Pancreatitis
    d) Ataxia
    e) Subcapsular Splenic hemorrhage

386. All of the following are complications of EBV infectious mononucleosis **except**:
    a) Guillain-Barre syndrome
    b) Reye syndrome
    c) Upper airway obstruction
    d) Orchitis
    e) Subcapsular hepatic hemorrhage

387. All of the following problems are higher in children who are poor **except**:
    a) Suicide
    b) Deaths due to disease
    c) Lead poisoning
    d) Delayed immunization
    e) Severely impaired vision

388. The growth of infants during the 1st year of life is:
    a) Two-fold increase in weight and two-fold increase in length
    b) Two-fold increase in weight and three-fold increase in length
    c) Four-fold increase in weight and one-fold increase in length
    d) One-fold increase in weight and one-fold increase in length
    e) Three-fold increase in weight and two-fold increase in length

389. By the end of the 1st week of life, most infants need:
    a) 0-3 feedings/day
    b) 3-6 feedings/day
    c) 6-9 feedings/day
    d) 9-12 feedings/day
    e) 12-15 feedings/day

390. By the end of the 1st week of life, most infants tolerate:
    a) 40-50 mL/feeding
    b) 50-60 mL/feeding
    c) 60-70 mL/feeding
    d) 70-80 mL/feeding
    e) 80-90 mL/feeding

391. Serving sizes of 2-3 year old children should be about:
    a) One-third of 4-6 years old children and milk is included.
    b) Two-third of 4-6 years old children except for milk.
    c) Three-fourth of 4-6 years old children except for milk.
    d) One-half of 4-6 years old children except for milk.
    e) One-quarter of 4-6 years old children except for milk.

392. A 2-month-old infant appears with loose stools and discomfort for the last 2 days. His mother noticed that the infant develops loose stools when she infests spices and improves when she ingests spices and improves when does not ingest spices. The infant has no other symptoms. The infant is receiving breast milk only. The next step in management is:
    Stop breast feeding and switch to a formula feeding
    Give more spices in foods and make a definitive diagnosis.
    Mother should not ingest spices rest of her life.
    Mother should continue to ingest spices despite loose stools and the infant should get used to spices.
    Mother should stop ingesting spices when there is a strong correlation between spices and diarrheal symptoms.

393. In children, obesity is most commonly associated with:
   a) Delayed puberty
   b) Childish behavior
   c) Tall stature
   d) Gynecomastia
   e) Decreased academic performance in school

394. A routine physical examination of an obese child reveals a hypertrophic hyperpigmentation of the skin on the posterior neck and in skin creases. The child has a higher risk of developing the following disease.
   a) Eczema
   b) Asthma
   c) Type 1 diabetes
   d) Type 2 diabetes
   e) Malignancy

395. Obesity is diagnosed in most children by:
   a) Hemoglobin A 1C
   b) Serum leptin levels
   c) Inspection
   d) Body mass index (BMI)
   e) Family history

396. In obese children, all other following laboratory tests are indicated **except**:
   a) Plasma lipid profiles
   b) Fasting glucose levels
   c) Fasting insulin levels
   d) Hemoglobin A 1C
   e) Serum electrolytes

397. All of the following are potential complications of obesity **except**:
   a) Cardiovascular disease
   b) Diabetes
   c) Asthma
   d) Sleep apnea
   e) Hyperthyroidism

398. All of the following therapies are indicated in obesity **except**:
   a) Increased computer games
   b) Decreased dietary calories
   c) Decreased dietary carbohydrates
   d) Decreased dietary fats
   e) Increased physical activities

399. The preferred method to manage the obesity epidemic in children is:
   a) Reduce foods intake
   b) Reduce TV viewing
   c) Aerobic exercise
   d) Education and prevention
   e) Reduce computer games playing

400. A child developed a sensory neuropathy. The most likely cause is:
   a) Vitamin A toxicity
   b) Vitamin C toxicity
   c) Vitamin C deficiency
   d) Vitamin $B_6$ toxicity
   e) Vitamin $B_2$ toxicity

401. A preterm (35 weeks gestational age) newborn appears with a severe respiratory distress. A physical examination reveals a long narrow thorax, short neck, very short extremities, large head, and cloverleaf skull. The mother has a history of Polyhydramnios. The infant is intubated and placed on a mechanical ventilator. The most likely diagnosis is:
a) Respiratory distress syndrome
b) Achondroplasia
c) Thanatophoric dysplasia
d) Hypochondroplasia
e) Jansen metaphyseal dysplasia

402. A full term newborn appears with a large head, prominent forehead, long narrow trunk, short extremities especially proximal segments, trident fingers, and hyperextensible joints except elbows. The most likely diagnosis is:
a) Achondroplasia
b) Hypochondroplasia
c) Jansen metaphyseal dysplasia
d) Noonan syndrome
e) Conradi-Hunnermann syndrome

403. The mode of inheritance in patients with a Marfan syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

404. The chromosome involved in Marfa syndrome is:
a) Chromosome 1
b) Chromosome 5
c) Chromosome 13
d) Chromosome 15
e) Chromosome 22

405. All of the following ocular findings are noted in patients with a Marfan syndrome **except**:
a) Dislocated lens
b) Blue sclera
c) Myopia
d) Iriodonesis
e) Corneal opacity

406. A 15-year-old girl is admitted for acetaminophen poisoning. She vomited a few times in the ER. The plasma acetaminophen level should be obtained:
a) 30 minutes after ingestion
b) 1 hour after ingestion
c) 2 hours after ingestion
d) 3 hours after ingestion
e) 4 hours after ingestion

407. A 17-year-old girl appears with an abdominal pain for the last 6 hours. Her mother stated that she took unknown quantities of acetaminophen tablets about 30 hours prior to the onset of an abdominal pain. She has problems in school and with her boyfriend. She vomited several times at home yesterday. Subsequently, vomiting stopped and she became asymptomatic except mild abdominal pain. A physical examination reveals a mild right upper quadrant tenderness. The next step in management is:
a) Follow-up visit in a clinic after 24 hours.
b) Notify her private MD and make an early appointment.
c) No investigation is indicated a this time but notify the social worker to talk to the patient.
d) Give a specific instruction to the patient and her mother that she should return to the emergency if she becomes ill.
e) A plasma acetaminophen level, LFTs, and prothrombin time should be obtained.

408. A child appears wit hypertension and female pseudohermaphroditism. The most likely diagnosis:
a) 21-hydroxylase deficiency
b) 11 beta-hydroxylase deficiency

c) 3 beta-hydroxysteroid dehydrogenase deficiency
d) Lipoid adrenal hyperplasia
e) 17 alpha-hydroxy / 17, 20 lyase deficiency

409. The most common site of origin in patients with a pheochromocytoma is:
a) Adrenal medulla
b) Near the bifurcation of aorta
c) Near the superior mesentericartery
d) Urinary bladder
e) Thoracic cavity

410. The following chromosome is associated in patients with a Noonan syndrome:
a) Chromosome 11
b) Chromosome 13
c) Chromosome 15
d) Chromosome 17
e) Chromosome 19

411. In patients with a Klinefelter syndrome, MRI studies usually reveal:
a) Increased temporal lobes volumes
b) Reduced left temporal lobe gray matter volumes
c) Reduced parietal lobe volumes
d) Reduced frontal lobe volumes
e) Reduced right temporal lobe gray matter volumes

412. The mode of inheritance in patients with a Kallmann syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked short arm
d) X-linked long arm
e) Multifactorial

413. A 15-year-old boy appear with a pain and enlargement of the right breast for the last 2 weeks. A physical examination reveals a tender and enlarged right breast. The next step in management is:
a) Danazol
b) Anastrozole
c) Testolactone
d) Surgical removal of the breast
e) Reassurance

414. The following medication can cause polycystic ovarian syndrome (PCOS):
a) Valproate
b) Phenytoin
c) INH
d) Rifampin
e) Ketoconazole

415. Stein-Leventhal syndrome includes all of the following except:
a) Hirsutism
b) Bilateral polycystic ovaries
c) Obesity
d) Secondary amenorrhea
e) Fertility

416. An adolescents girl appears with a primary amenorrhea. Her height is normal. She appears as a female. A physical examination reveals absence of breasts development but normal external genitalia. Pelvic ultrasonography reveals a normal vagina, uterus, and fallopian tubes. The most likely diagnosis is:
a) XY gonadal agenesis syndrome
b) Denys-Drash syndrome

c) XY pure gonadal dysgenesis
d) WAGR syndrome
e) Camptomelic syndrome

417. Rabson-Mendenhall syndrome includes all of the following features **except**:
a) Extreme insulin resistance
b) Pineal hypoplasia
c) Acanthosis nigricans
d) Defects in insulin receptor gene
e) Abnormalities of the teeth and nails

418. Leprechaunism includes all of the following features **except**:
a) Fasting hypoglycemia
b) Postprandial hyperglycemia
c) Severe resistance to insulin
d) Defects in insulin receptor
e) Large for gestational age

419. A routine physical examination of the newborn reveals a prominent bony ridge on the skull, long and narrow head. The preferred diagnostic method for this condition is:
a) Head ultrasonography
b) Head MRI
c) Head CT scan
d) Skull x-ray
e) Bone scan

420. Scaphocephaly is associated with all of the following conditions **except**:
a) Increased intracranial pressure
b) Prominent occiput
c) Broad forehead
d) Small anterior fontanel
e) Absent anterior fontanel

421. A 2-day-old healthy newborn appears wit a seizure-like activities. All of the following statements can differentiate a seizure from nonepileptiform activities **except**:
a) Seizure activities are associated with tachycardia.
b) Seizure activities are not associated with an elevation of the blood pressure.
c) Seizure are not supported by gentle restraint.
d) Seizures are not enhanced by a sensory stimulation.
e) Seizures can be diagnosed by using a polygraphic EEG recording with video monitoring.

422. A newborn female appears with refractory seizure activities. A physical examination reveals a crusted vesicular lesions on the skin, coloboma of the iris, and retinal lacunae. The head CT scan reveals an absence of corpus callosum. The most likely diagnosis is:
a) Herpes encephalitis
b) Metastatic Wilms tumor
c) Metastatic retinoblastoma
d) Methadone withdrawal
e) Aicardi syndrome

423. Aicardi syndrome patients usually have the following type seizure activities:
a) Generalized myoclonic seizures
b) Focal myoclonic seizure
c) Multifocal clonic seizures
d) Tonic seizures
e) Subtle seizures

424. A full term newborn develops irritability, jitteriness, and brief focal jerky movements of the extremities that involves distal muscle groups. The mother denies taking drugs. The serum glucose and electrolytes are normal. She was born by a NSVD with Apgar scores of 7 and 8 at 1 and 5 minutes respectively. The most likely diagnosis is:
   a) Perinatal asphyxia
   b) Subdural hemorrhage
   c) Intraventricular hemorrhage
   d) Drug withdrawal seizures
   e) Phenylketonuria

425. A child appears with history of a fever, headache, severe malaise, rigors, and vomiting. About 3 days later, he developed rashes over the face and extremities. The rashes were initially macular followed by papular and pustular. On the 10th day, the rashes begin to crust. The rashes have a centrifugal distribution. The most likely diagnosis is:
   a) Measles
   b) Rubella
   c) Chickenpox
   d) Smallpox
   e) Exposure to lewisite

426. A child appears with a snake bite in the left lower extremity about an hour ago. The dead snake has a rounded head and round pupil. The next step in management is:
   a) Apply a tourniquet proximal to the site of injury
   b) Give antivenin prophylaxis
   c) Apply ice to the site of injury
   d) Excision and suction of the site of injury
   e) Reassurance and local wound care if indicated.

427. A child appears with a coral snake bite in the right lower extremity about an hour ago. He has a mild pain and little swelling in the affected area. The child has no other symptoms. The management includes all of the following **except**:
   a) Prophylactic antivenin
   b) Applying a tourniquet proximal to the site of injury
   c) A large bore intravenous line should be started.
   d) Local wound care
   e) Applying ice to the site of injury

428. A patient did **not** receive an antivenin therapy after a coral snake bite. The most likely complication is:
   a) Gangrene of the extremity
   b) Thrombosis of leg veins
   c) Arrythmias
   d) Hepatic failure
   e) Paralysis

429. Transposition of great vessels are most commonly associated with:
   a) ASD
   b) VSD
   c) Pulmonic stenosis
   d) Aortic stenosis
   e) Tricuspid regurgitation

430. A 9-month-old appears with a respiratory distress. He was previously admitted for recurrent pneumonia. A physical examination reveals wheezing, intercostals retractions, mild cyanosis, hyperdynamic precordium, and a loud to-and-fro murmur over theleft upper sternal border. The most likely diagnosis is:
   a) Pulmonic stenosis
   b) Aortic stenosis
   c) Aortic regurgitation
   d) Truncus arteriosus
   e) Congenital absence of the pulmonary valve

431. The following chromosome is involved in patients with a William syndrome:
   a) Chromosome 5

b) Chromosome 7
c) Chromosome 11
d) Chromosome 13
e) Chromosome 17

432. The preferred therapy for children with a moderate to severe aortic valvular stenosis is:
a) Balloon valvuloplasty
b) Konno procedure
c) Surgical valve replacement
d) Aortopulmonary anastomosis
e) Rashkind procedure

433. A child was diagnosed with a coarctation of aorta. The operative repair was performed. Several months after surgery, the child developed a systolic ejection murmur along the left sternal border. The most likely condition that becomes apparent after a surgical procedure for coarctation of aorta is:
a) Aortic insufficiency
b) Recurrence of aortic coarctation
c) Mitral stenosis
d) Mitral insufficiency
e) Subvalvular aortic stenosis

434. A child appears with symptoms of shortness of breathe and fatigue with a mild exertion. The private MD appreciated a systolic ejection murmur at the sternal border. The patient was referred to a pediatric cardiologist. The echocardiogram reveals an aortic stenosis and severe tunnel-like subaortic obstruction. The preferred therapy is:
a) Kenno procedure
b) Balloon valvuloplasty
c) Aortopulmonary anastomosis
d) Put a stent in the obstructed area
e) Create an artificial VSD

435. A child who is a known asthmatic appears with a sudden onset of cough, dyspnea, tachypnea, shallow respiration, and tachycardia. The child has no fever. A physical examination reveals a mild cyanosis, decreased breath sounds and crackles over the right upper thoracic cavity. The most likely diagnosis is:
a) Right pneumothorax
b) Left pneumothorax
c) Right upper lobe pneumonia
d) Right upper lobe atelactasis
e) Right lower lobe bronchiectasis

436. A child appears with a moderate amount of bleeding through the mouth. All of the following findings indicate a hemoptysis **except**:
a) Bright red color
b) Frothy
c) Nausea
d) Accompanied by cough
e) Alkaline pH

437. A child appears with a massive bleeding through the mouth and nose. The following finding does **not** indicate a hematemesis:
a) Dark red blood
b) Acidic pH
c) Nausea
d) Frothy
e) Presence of food particles

438. A child appears with a fever, cough, sputum production, tachypnea, dyspnea, hemoptysis, and weight loss. A physical examination reveals intercostals retractions, crackles, decreased breath sounds, and dullness to percussion in the right upper chest area. The chest x-ray reveals parenchymal inflammations with a cavity containing air-fluid level in the right upper lobe. The most likely diagnosis is:
a) Right upper lobe TB

b) Right upper lobe pneumonia
c) Right upper lobe abscess
d) Right upper lobe cyst
e) Right upper lobe obstruction

439. The preferred diagnostic study in patients with a pulmonary abscess is:
a) Chest x-ray
b) Lung scan
c) Lung CT scan
d) Bronchoscopy
e) Sputum culture

440. The following statement is not true about pulmonary aspirations and abscesses:
a) A secondary lung abscess is more common in the right side, particularly in immunocompromised children.
b) A primary lung abscess is more common in the right side.
c) If the child is upright, the posterior segments of upper lobes are affected.
d) If the child is in recumbent position, left and right upper lobes are affected.
e) In a recumbant position, apical segment of the right upper lobe is affected.

441. Heterotaxy syndromes are associated with all of the following cardiac conditions **except**:
a) Dextrocardia
b) Transposition of great arteries
c) Common atrioventricular valve
d) Single atrium
e) Total anomalous pulmonary venous return

442. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg respectively. The oxygen saturation and pressure in the right ventricle are 74% and 40/6 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 74% and 5 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 80% and 105/10 mm Hg. The oxygen saturation and pressure in the aorta are 80% and 100/60 mm Hg. The preferred surgical procedure is:
a) Arterial switch (Jatene) operation
b) Norwood operation
c) Starnes procedure
d) Fontan procedure
e) Blalock-Taussig shunt

443. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg. The oxygen saturation and pressure in the right ventricle are 74% and 100/8 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 98% and 40/2 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 98% and 40/2 mm Hg. The oxygen saturation and pressure in the aorta are 74% and 100/60 mm Hg. The preferred surgical procedure is:
a) Blalock-Taussig shunt
b) Arterial switch (Jatene) operation
c) Glenn shunt
d) Fontan procedure
e) Norwood operation

444. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg. The oxygen saturation and pressure in the right ventricle are 80% and 35/5 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 80% and 25/10 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 98% and 100/8 mm Hg. The oxygen saturation and pressure in the aorta are 98% and 100/60 mm Hg. The preferred surgical procedure is:
a) Repair of VSD
b) Repair of ASD
c) Surgical closure of PDA

d) Surgical repair of truncus arteriosus
e) Total repair of anomalous pulmonary venous return

445. A child appears with a history of vomiting and diarrhea for the last 5 days. The serum electrolyte results reveal Na 120, Cl 84, K 5.0, glucose 80, BUN 20, creatinine 1.0, and urine specific gravity is 1022. The next step in management is:
a) Give DDAVP
b) Slow correction of sodium over 48 hours
c) Fluid restrictions
d) Repeat the test
e) Correct hyponatremic dehydration

446. A child appears with a history of vomiting and diarrhea for the last 3 days. The serum electrolyte results reveal Na 157, cl 119, K 4.0, glucose 70, BUN 22, creatinine 1.2, and urine specific gravity is 1020. The next step in management is:
a) Give maintenance sodium chloride infusions
b) DDAVP
c) Correct hypernatremia over 12 hours
d) Correct hypernatremia over 48 hours
e) Give excessive fluids

447. A child appears with a history of diarrhea with vomiting for the last 7 days. The mother could not afford oral electrolyte solutions. A solution was made at home with an added salt and sugar. The serum electrolyte results reveal Na 160, Cl 126, K 4.0, glucose 88, BUN 6, creatinine 0.6, and urine specific gravity is 1008. The next step in management is:
a) Give excessive fluids
b) DDAVP
c) Admit the patient
d) Restrict the fluids
e) Repeat the blood test

448. A child appears with a persistent headache and polyuria for the last 2 weeks. The serum electrolyte results reveal Na 160, Cl 118, K 4.0, glucose 90, BUN 25, creatinine 1.7, and urine specific gravity is 1002. The next step in management is:
a) Give excessive fluids, then DDAVP
b) Fluid restriction therapy
c) Give subcutaneous insulin therapy
d) Slow correction of sodium over 48 hours
e) Repeat the blood test

449. The side effect of following medication is hypokalemia:
a) Hydralazine
b) Minoxidil
c) Propranolol
d) Furosemide
e) Enalaprilat

450. The side effect of following medication is facial flushing:
a) Clonidine
b) Diazoxide
c) Enalapril
d) Hydrochlorthiazide
e) Nifedipine

451. The side effect of following medication is hypotension:
a) Enalapril
b) Bumetanide
c) Labetalol
d) Nitroprusside
e) Captopril

452. The side effect of following medication is hypertension:
a) Clonidine

b) Phentolamine
c) Enalaprilat
d) Nifedipine
e) Hydralazine

453. A breast-fed infant appears pale in a routine physical examination. Her mother is a vegan. The infant is not receiving any milk formula or baby foods. The infant has a sickle cell trait. The most likely diagnosis is:
a) Iron deficiency anemia
b) Vitamin $B_{12}$ deficiency
c) Folic acid deficiency
d) Sickle cell disease
e) Thallasemia major

454. Pearson's syndrome has all of the following characteristics **except**:
a) Microcytic anemia
b) Neutropenia
c) Thrombocytopenia
d) Vacuolization of RBC
e) Vacuolization of myeloid precursors.

455. The normal reticulocyte index is:
a) 0.1
b) 0.5
c) 1.0
d) 1.5
e) 2.0

456. The usual reticulocyte index in a chronic hemolytic anemia is between:
a) 0-1
b) 1-2
c) 2-3
d) 3-4
e) 6-8

457. A 5-year-old boy appears with a sudden onset of jaundice and right upper abdominal pain for the last 2 days. He was asymptomatic prior to this episode. His mother had history of splenectomy during childhood. A physical examination reveals jaundice, splenomegaly, and right upper quadrant tenderness. Ultrasonography reveals multiple gallstones. The most likely diagnosis is:
a) Acute cholecystitis
b) Gallstone of the bile duct
c) Biliary atresia
d) Hereditary spherocytosis
e) Acute hepatitis A infection

458. A routine newborn physical examination revealed heart rate 170 beats per minute. The newborn was crying at that time. The rest of the physical examination was unremarkable. The next step in management is:
a) EKG
b) Chest x-ray
c) ABG
d) Echocardiogram
e) Reassurance

459. A routine newborn physical examination revealed heart rate 70 beats per minute. The newborn was sleeping at that time. The rest of the physical examination was unremarkable. The next step in management is:
a) ABG
b) EKG
c) Chest x-ray
d) Cardiology consult
e) Reassurance

460. A 15-year-old boy came for a routine physical examination. He is a good athlete. A physical examination reveals heart rate 40 beats per minute. The rest o the physical examination is unremarkable. The next step in management is:
    a) EKG
    b) Stress test
    c) Cardiology consult
    d) Pace maker
    e) Reassurance

461. All of the following statements indicate pathologic conditions **except**:
    a) A newborn's heart rate is more than 200 beats per minute persistently.
    b) An infant's heart rate is more than 150 beats per minute persistently.
    c) An older child's heart rate is more than 120 beats per minute persistently.
    d) A full term infant's heart rate is 68 beats per minute during sleep.
    e) A 16-year-old athlete's heart rate is 40 beats per minute.

462. A newborn appears wit a pink right arm and blue lower extremities. The most likely diagnosis is:
    a) Tetralogy of Fallot
    b) Transposition of great arteries
    c) Truncus arteriosus
    d) Coarctation of aorta
    e) Total anomalous pulmonary venous return

463. A newborn appears wit a blue upper arm and less blue lower extremities. The most likely diagnosis is:
    a) Transposition of great arteries
    b) Tetralogy of Fallot
    c) Truncus arteriosus
    d) Tricuspid atresia
    e) Total anomalous pulmonary venous return

464. A newborn appears with a circumoral cyanosis. The mucous membranes (i.e., lips and tongue) are pink. The most likely diagnosis is:
    a) Cold lips
    b) VSD
    c) ASD
    d) PDA
    e) Prominent venous plexus in lips

465. A new born appears with a blueness around the forehead. The rest of the physical examination is unremarkable. The most likely diagnosis is:
    a) Cold forehead
    b) Meningocele
    c) Hydrocephalus
    d) Encephalocele
    e) Prominent venous plexus on the forehead

466. A newborn appears with a cyanosis of both hands and feet. The rest of the physical examination is unremarkable. The most likely diagnosis is:
    a) Transposition of great vessels
    b) Gram-negative septic shock
    c) Patent foramen ovale
    d) Unwrapped and cold extremities
    e) Persistent pulmonary hypertension

467. The common organisms in patients with **a native valve** and infective endocarditis are all of the following **except**:
    a) Staphylococcus epidermidis
    b) Staphylococcus aureus
    c) Streptococcus mutans
    d) Streptococcus sanguis
    e) Streptococcus bovis

468. The most common organism in patients with an infective endocarditis **without an underlying heart disease** is:
   a) S. aureus
   b) Pseudomonas aeruginosa
   c) Serratia marcescens
   d) Streptococcus mitis
   e) Streptococcus faecalis

469. The most common organism in patients with an infective endocarditis after a **dental procedure** is:
   a) Streptococcus mutans
   b) S. aureus
   c) Streptococcus bovis
   d) Streptococcus pneumoniae
   e) Streptococcus faecalis

470. The most common organism in patients with an infective endocarditis after a **lower bowel surgery** is:
   a) Streptococcus bovis
   b) Streptococcus mutans
   c) Streptococcus sunguis
   d) E. coli
   e) Serratia marcescens

471. The most common organism in patients with an infective endocarditis after a **genitourinary intervention** is:
   a) Streptococcus pneumoniae
   b) E. coli
   c) Pseudomonas aeruginosa
   d) Campylobacter fetus
   e) Streptococcus faecalis

472. The most common organism in patients with an infective endocarditis and **intravenous drug abusers** is:
   a) Streptococcus aureus
   b) Pseudomonas aeruginosa
   c) Streptococcus epidermidis
   d) Streptococcus mitis
   e) Candida albicans

473. The most common organism in patients with an infective endocarditis and **indwelling central venous catheter** is:
   a) S. aureus
   b) Serratia marcescens
   c) S. epidermidis
   d) Candida albicans
   e) Haemophilus influenzae

474. The following condition is an important risk factor for developing an infective endocarditis in children with a **cyanotic heart disease**:
   a) Diarrhea
   b) RSV infection
   c) MMR vaccination
   d) Poor dental hygiene
   e) Arrythmias

475. All of the following **postoperative cardiac conditions** are risk factors for developing infective endocarditis **except**:
   a) Replaced aortic valve
   b) Norwood aortopulmonary anastomosis
   c) Blalock-Taussig shunt
   d) Repair a mitral valve
   e) Repair of a simple atrial septal defect

476. All of the following **preoperative cardiac conditions** are risk factors for developing infective endocarditis **except**:
   a) VSD
   b) Tetralogy of Fallot
   c) Aortic stenosis
   d) Tricuspid regurgitation in newborns
   e) Transposition of great arteries

477. A 3-month-old boy appears with macrocytic anemia and reticulocytopenia. The bone marrow examination reveals a deficiency of RBC precursors in an otherwise normally cellular marrow. A physical examination reveals triphalangeal thumbs. The most likely diagnosis is:
   a) Folic acid deficiency
   b) Vitamin $B_{12}$ deficiency
   c) Parvovirus B19
   d) Diamond-Blackfan anemia
   e) Transient erythroblastopenia of childhood

478. All of the following laboratory findings are suggestive of Diamond-Blackfan anemia (or congenital Hypoplastic anemia) **except**:
   a) Increased erythrocyte adenosine deaminase activities
   b) Normal fetal hemoglobin levels
   c) Increased expression of 'i' antigen
   d) Elevated serum iron levels
   e) Macrocytic anemia with reticulocytopenia

479. The preferred therapy in patients with a Diamond-Blackfan anemia is:
   a) Cyclosporine
   b) Corticosteroids
   c) Cyclophosphamide
   d) Antithymosite globulin (ATG)
   e) Intravenous immunoglobulin

480. All of the following tumors most commonly occur during the 1st year of life **except**:
   a) Neuroblastomas
   b) Retinoblastomas
   c) Wilms tumor
   d) Gliomas
   e) Rhabdomyosarcomas

481. All of the following tumors most commonly occur between 6-18 years of age, especially during puberty **except**:
   a) Osteosarcomas
   b) Ewing sarcomas
   c) Soft tissue sarcomas
   d) Hodgkin disease
   e) Non-Hodgkin lymphomas

482. A patient is exposed to an ionizing radiation therapy. The patient may develop:
   a) Ewing sarcomas
   b) Rhabdomyosarcomas
   c) Non-Hodgkin lymphomas
   d) Osteosarcomas
   e) Neuroblastomas

483. A 4-year-old boy is diagnosed to have an Epstein-Barr virus infection. He has an increased risk of the following disease:
   a) Non-Hodgkin lymphoma
   b) Hodgkin disease
   c) Wilms tumor
   d) Acute lymphoid leukemia
   e) Acute myeloid leukemia

484. Neurofibromatosis type 1 is strongly associated with the following disease:
   a) Optic gliomas
   b) Hepatoblastomas
   c) Retinoblastomas
   d) Neuroblastomas
   e) Osteosarcomas

485. All of the following conditions have an increased risk of acute lymphoid leukemias **except**:
   a) Li-Fraumeni syndrome
   b) Bloom's syndrome
   c) Down syndrome
   d) Neurofibromatosis type 1
   e) Ataxia-telangiectasia

486. Beckwith-Wiedemann syndrome is associated with the following condition:
   a) Wilms tumor
   b) Neuroblastoma
   c) Retinoblastoma
   d) Ewing sarcoma
   e) Rhabdomyosarcoma

487. A newborn is diagnosed to have a hereditary retinoblastoma. The infant is at risk of developing the following tumor:
   a) Hepatoblastoma
   b) Ewing sarcoma
   c) Rhabdomyosarcoma
   d) Osteosarcoma
   e) Wilms tumor

488. A 6-year-old boy appears with a bleeding from the urethra and dysuria. He had similar episodes 6 months and 12 months ago. The mother denies any history trauma. In each episode, he experienced 1-2 times bleeding that stopped spontaneously without any intervention. The next step in management is:
   a) Renal ultrasonography
   b) Urethrogram
   c) Urine culture
   d) Bladder ultrasonography
   e) Reassurance

489. All of the following conditions cause gross hematuria **except**:
   a) IgA nephropathy
   b) Alport syndrome
   c) SLE nephritis
   d) Posterior urethral valve
   e) Henoch-Schonlein purpura nephritis

490. The most common tumor site of teratomas is:
   a) Lumbar
   b) Thoracic
   c) Cervical
   d) Lumbosacral
   e) Sacrococcygeal

491. Albright syndrome is characterized by a triad of:
   a) Osteoporosis, blue sclera, and glaucoma
   b) Osteoporosis, Wilms tumor, aniridia
   c) Retinoblastoma, osteosarcoma, and broad thumbs
   d) Ewing sarcoma, cataract, and hydronephrosis
   e) Polyostotic disease, precious puberty and skin pigmentation.

492. A child appears with a history of tibial bone pain in night and the pain is relieved by aspirin. The most likely diagnosis is:
a) Osteosarcoma
b) Ewing sarcoma
c) Osteoid osteoma
d) Osteochondroma
e) Enchondroma

493. A child appears with a pain in the lone bone that is not relieved by aspirin. The pain awakens the child at night. The most likely diagnosis is:
a) Fibroma
b) Aneurysmal bone cyst
c) Osteochondroma
d) Unicameral bone cyst
e) Osteosarcoma

494. A routine screening urinalysis should be obtained initially at:
a) 1 year of age
b) 2 years of age
c) 3 years of age
d) 4 years of age
e) 5 years of age

495. A 14-year-old girl noticed blood in the urine. Her menstrual periods are irregular. She is constipated. The routine urinalysis reveals blood. She denies suprapubic tenderness and flank pain. The most likely diagnosis is:
a) Asymptomatic UTI
b) Hemorrhoidal bleeding
c) Glomerular disease
d) Ureteral bleeding
e) Urine contaminated with menstrual bleeding

496. A 10-year-old healthy boy appears for a routine physical examination. The urinalysis reveals more than 100,000 RBCs per 12 hours period. The next step in management is:
a) Urine culture
b) Renal ultrasonography
c) Intravenous pyelography
d) Voiding cystourethrogram
e) Reassurance

497. A fair skinned and blond child appears with polyuria, polydipsia, growth failure, rickets, and photophobia. This condition is usually associated with all of the following **except**:
a) Hyperthyroidism
b) Retinopathy
c) Impaired visual acuity
d) Delayed sexual maturation
e) Hepatosplenomegaly

498. The preferred diagnostic study in patients with a cystinosis is:
a) RBC cystine content
b) WBC cystine content
c) Plasma cystine level
d) Urine cystine content
e) Presence of cystine crystals in the cornea

499. The following statement is **not** true about immunizations in patients with a chronic renal failure (CRF):
a) CRF patients respond to immunizations optimally.
b) All children with CRF should receive a yearly influenza vaccine.
c) Live virus vaccines (MMR, Varicella) should not be given during immunosuppressive therapies.
d) Live virus vaccines should be given before a renal transplantation.
e) All children with CRF should receive all standard immunizations like healthy children

500. The most common cause of graft failure in patients with a renal transplantation is:
   a) Thrombosis of renal veins
   b) Thrombosis of renal arteries
   c) Acute tubular necrosis
   d) Rejection
   e) Disseminated intravascular coagulation

501. The most common cause of end-stage renal disease (ESRD) in children is:
   a) Metabolic disease
   b) Glomerulonephritides
   c) Congenital renal disease
   d) IgA nephropathies
   e) Focal segmental glomerular sclerosis

502. The one of the most serious problems occur in patients with a spina bifida is:
   a) Latex allergy
   b) Microcephaly
   c) Spinal cord tumor
   d) Brain tumor
   e) Mental retardation

503. Latex allergy is due to the following:
   a) IgA-mediated
   b) IgG-mediated
   c) IgM-mediated
   d) IgE-mediated
   e) IgD-mediated

504. A child appears with watery eyes, sneezing, itching, and hives. He has a neurogenic bladder and required clean intermittent catheterizations. The most likely diagnosis is:
   a) Rhinovirus infection
   b) Drug allergy
   c) Latex allergy
   d) Adenovirus infection
   e) Allergic to dust

505. A routine newborn physical examination reveals a penile length of 1.9 cm. The rest of the physical examination is normal. The serum glucose level is normal. The next step in management is:
   a) Endocrine consultation
   b) Genetic consultation
   c) Neurology consultation
   d) Head MRI study
   e) Reassurance

506. The most common cause of micropenis (less than 1.9 cm in length) is:
   a) Decreased amount of gonadotropin-releasing hormone
   b) Decreased amount of growth hormone
   c) Decreased amount of testosterone
   d) Decreased amount of dehydrotestosterone
   e) Increased amount of estrogen

507. The children with a micropenis should all of the following evaluations **except**:
   a) Endocrinology consultation
   b) Urology consultation
   c) Karyotype study
   d) MRI of the brain
   e) Assessment of posterior pituitary function

508. A 3-day-old newborn appears with lesions in the periumbilical areas. The lesions were vesicular initially, crusted subsequently. The most likely diagnosis is:
a) S. aureus infection
b) S. epidermidis infection
c) Herpes simplex virus infection
d) Herpes zoster infection
e) Candida albicans infections

509. A 4-year-old girl appears with a chronic atrophic skin lesions over the vulva for the last 6 weeks. The lesions are small, pink to ivory, flat-topped papules that coalesce into plaques that become wrinkled and atrophic. The anogenital lsion has a figure 8 or hour-glass appearance. The most likely diagnosis is:
a) Lichen planus
b) Lichen sclerosus
c) Lichen simplex chronicus
d) Vulvar psorias
e) Atopic dermatitis

510. A 3-year-old girl appears with a lesion in the anogenital area. Human papillomavirus (HPV) is identified. The following condition should be ruled out:
a) Malignancy
b) Sexual abuse
c) Associated bacterial infection
d) Associated candida infection
e) Foreign body in the vagina

511. A couple appears in a clinic. They both have an inflammatory bowel disease (IBD). They have a 4-year-old girl and 2-year-old boy. The incidence of IBD in a child whose parents both have a the IBD is:
a) 1%
b) 5%
c) 10%
d) 25%
e) More than 35%

512. The risk of an inflammatory bowel disease (IBD) in family members of an affected individual is:
a) 1-6%
b) 7-22%
c) 23-35%
d) 35-50%
e) 50-66%

513. A 17-year-old boy appears with an abdominal pain, bloody diarrhea, and low-grade fever. He had a surgery for ulcerative colitis. The distal ileum was pulled down and sutured at the internal anus with a 'J' pouch created from ileum immediately above the rectal cuff. The preferred therapy is:
a) Metronidazole
b) Loperamide
c) Sulfasalazine
d) Ceftriaxone
e) Vancomycin

514. All of the following side effects are due to a prolonged use of oral corticosteroids therapy **except**:
a) Adrenal suppression
b) Cataracts
c) Growth retardation
d) Glucose intolerance
e) Aseptic necrosis of the neck of the femur

515. The preferred therapy for patients with a proctitis secondary to ulcerative colitis is:
a) Metronidazole orally
b) Sulfasalazine orally

c) Hydrocortisone intravenously
d) Prednisone orally
e) Aminosalicylate enemas

516. Classically ulcerative colitis usually begins:
a) Rectum
b) Ascending colon
c) Transverse colon
d) Descending colon
e) Sigmoid colon

517. The preferred diagnostic study in patients with an ulcerative colitis is:
a) Plain abdominal x-ray
b) Barium enema
c) Abdominal CT scan study
d) Abdominal MRI study
e) Endoscopy and biopsy

518. The gross appearance of a rectum in patients with an ulcerative colitis includes all of the following **except**:
a) Edema
b) Erythema
c) Segmented lesions
d) Granular appearance
e) Loss of vascular pattern

519. The most common site of Crohn disease is:
a) Terminal ileum
b) Proximal ileum
c) Jejunum
d) Duodenum
e) Esophagus

520. The most characteristic histologic finding in patients with a Crohn disease is:
a) Increased fibrous tissues
b) Increased lymphocytes counts
c) Increased smooth muscles mass
d) Increased eosinophil counts
e) Noncaseating granulomas

521. The following statement is **not** true about clinical manifestations of a Crohn disease:
a) Children with ileocolitis usually have cramping, abdominal pain, diarrhea, sometimes associated with blood.
b) Children with Crohn colitis may have blood diarrhea, tenesmus, and urgency.
c) Children with growth retardation have a decreased lean body mass but body fat is preserved.
d) Children usually develop perianal tags, fistulas, or abscesses.
e) Children have abdominal symptoms prior to a growth failure.

522. The preferred therapy for patients with an extensive small bowel or colonic Crohn disease is:
a) Oral mescalamine
b) Oral Sulfasalazine
c) Oral corticosteroids
d) Azathioprine
e) 6-mercaptopurine

523. A 15-year-old girl appears with perirectal fistulas secondary to Crohn disease. She has been receiving Metronidazole for a long period of time. The side effect of long-term Metronidazole therapy is:
a) Leukopenia
b) Thrombocytopenia
c) Hepatic failure

- d) Bone marrow suppression
- e) Neuropathy with paresthesias

524. All of the following conditions are IgE-mediated food hypersensitivity reactions **except**:
    - a) Food-induced enterocolitis
    - b) Oral allergy syndrome
    - c) Urticaria
    - d) Asthma
    - e) Gastrointestinal anaphylaxis

525. All of the following conditions are non-IgE mediated disorders **except**:
    - a) Allergic proctocolitis
    - b) Oropharyngeal itching
    - c) Food-induced enteropathy
    - d) Celiac disease
    - e) Pulmonary hemosiderosis

526. A routine physical examination of a child reveals a palpable liver 2 cm below the right costal margin. The next step in management is:
    - a) Liver function tests
    - b) Hepatic ultrasonography
    - c) Plain abdominal x-ray
    - d) Hepatobiliary scan
    - e) Reassurance

527. A routine newborn physical examination reveals a palpable liver 3.5 cm below the right costal margin. The next step in management is:
    - a) Total and direct bilirubins
    - b) Liver function tests
    - c) Hepatic ultrasonography
    - d) Chest x-ray
    - e) Reassurance

528. A 15-year-old boy appears with a mass in the right upper quadrant. The mass is broad, smooth, and has a well-defined lower margin. The boy is completely asymptomatic. He denies history of trauma. The most likely diagnosis is:
    - a) Hepatoma
    - b) Hepatoblastoma
    - c) Metastatic tumor in the liver
    - d) Hepatic cyst
    - e) Riedel lobe

529. The jaundice appears clinically in children when the serum concentration of bilirubin reaches:
    - a) 1-2 mg/dL
    - b) 2-3 mg/dL
    - c) 3-4 mg/dL
    - d) 4-5 mg/dL
    - e) 5-6 mg/dL

530. The jaundice may not appear clinically in neonates until the bilirubin level is over:
    - a) 1 mg/dL
    - b) 2 mg/dL
    - c) 3 mg/dL
    - d) 4 mg/dL
    - e) 5 mg/dL

531. A routine physical examination of a child reveals blotchy erythema over the thenar and hypothenar eminences and on the tip of the fingers. The most likely diagnosis is:
    - a) SLE
    - b) Dermatomyositis

- c) Chronic renal disease
- d) Allergic reaction
- e) Chronic liver disease

532. A 13-year-old rapidly growing boy has an elevated alkaline phosphatase level. The rest of the LFTs are normal. The most likely diagnosis is:
    - a) Obstructive liver disease
    - b) Acute hepatitis A
    - c) Acute hepatitis B
    - d) Hepatoblastoma
    - e) Normal

533. An ultrasonographic examination of an infant with Biliary atresia reveals all of the following **except**:
    - a) Small gallbladder
    - b) 'Triangular cord sign'
    - c) Absent gallbladder
    - d) Increased echogenicity of the liver
    - e) Nonvisualization of the common bile duct

534. The mode of inheritance in patients with a Wilson disease is:
    - a) Autosomal recessive
    - b) Autosomal dominant
    - c) X-linked recessive
    - d) X-linked dominant
    - e) Multifactorial

535. An opthalmologic examination of a child with a Wilson disease reveals:
    - a) Brush field spots in the iris
    - b) Cataracts
    - c) Glaucoma
    - d) Retinitis pigmentosa
    - e) Kayser-Fleischer ring in the cornea

536. In patients with a Wilson disease, the abnormal gene is located on the:
    - a) Chromosome 1
    - b) Chromosome 7
    - c) Chromosome 13
    - d) Chromosome 18
    - e) Chromosome 21

537. The predominant clinical manifestation in younger patients with a Wilson disease is:
    - a) Hemolysis
    - b) Neurologic manifestations
    - c) Behavioral changes
    - d) Hepatic manifestations
    - e) Kayser-Fleischer rings in the cornea

538. All of the following hepatic conditions can occur in patients with a Wilson disease **except**:
    - a) Asymptomatic hepatomegaly
    - b) Subacute hepatitis
    - c) Chronic hepatitis
    - d) Hepatoblastoma
    - e) Fulminant hepatic failure

539. Kayser-Fleische rings in the cornea are always present in patients with Wilson disease and have the following symptoms:
    - a) Hepatic
    - b) Behavioral
    - c) Hematologic

d) Psychiatric
e) Neurologic

540. The patients with a Wilson disease may be associated with the following syndrome:
a) Down syndrome
b) Fanconi syndrome
c) Marfan syndrome
d) Klinefelter syndrome
e) Williams syndrome

541. A 2-year-old boy appears in the ER with a history of foreign body inside the nose. A physical examination reveals a small perforation of the nasal septum. The foreign body is removed. The most likely foreign body is:
a) Bead
b) Bean
c) Crayon
d) Stones
e) Disk battery

542. A child had a nasal operation that required nasal packing. A follow-up appointment is given in ENT clinic. The mother missed the appointment. Subsequently, the child became ill, developed fever and a bad smell from the nasal packing area. The most serious complication is:
a) Dislodgement of the packing
b) Excessive bleeding
c) Apnea
d) Brain abscess
e) Toxic shock syndrome

543. A 5-year-old girl appears with a purulent unilateral nasal discharge for the last 3 days. A physical examination reveals unilateral purulent secretions but no foreign body is visualized. The next step in management is:
a) Amoxicillin-clavulanate
b) Cefuroxime
c) Azithromycin
d) Reassurance
e) Suctioning the secretions

544. A routine newborn physical examination at birth reveals a nasal septal deviated to the right. The most common cause is:
a) Choanal stenosis
b) Choanal atresia
c) Congenital syphilis
d) Frontal encephalocele
e) Trauma from delivery

545. The preferred management for newborns with a deviated nasal septum secondary to trauma during delivery is:
a) Reassurance
b) ENT outpatient appointment after 7 days
c) ENT outpatient appointment after 1 month
d) CT scan of the nose
e) Immediate realignment using blunt probes cotton applicators, and topical anesthesia

546. The following statement is **not** true in patients with a pulmonary sequestration:
a) The majority of sequestrations are intrapulmonary.
b) Extrapulmonary sequestrations are almost always involve the left lung
c) Extrapulmonary sequestrations are strongly associated with a diaphragmatic hernia.
d) Surgical removal is indicated.
e) The arterial supply in sequestration comes from a pulmonary artery and venous drainage returns to the left atrium through pulmonary veins.

547. The most common presentations in patients with a primary ciliary dyskinesia are:
   a) Situs inversus, otitis media, and chronic sinusitis
   b) Chronic sinusitis, otitis media, and wheezing
   c) Bronchiectasis, chronic sinusitis, and asthma
   d) Asthma, pneumonia, and bronchiectasis
   e) Productive cough, sinusitis and otitis media

548. The mode of inheritance in patients with a primary ciliary dyskinesia is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Unknown

549. The gold standard to make the diagnosis of primary ciliary dyskinesia is:
   a) CT scan of paranasal sinuses
   b) Pulmonary function tests
   c) CT scan of lungs
   d) Ultrasonography of sinuses
   e) Nasal biopsy

550. A pulmonary function test in older children with a primary ciliary dyskinesia reveals:
   a) Normal
   b) Restrictive lung disease
   c) Obstructive lung disease
   d) Both restrictive and obstructive lung diseases with an equal frequency
   e) More restrictive than an obstructive lung disease

551. The cardiac output in a normal healthy newborn is about:
   a) 75 mL/kg/minute
   b) 150 mL/kg/min
   c) 200 mL/kg/minute
   d) 300 mL/kg/min
   e) 350 mL/kg/minute

552. The foramen ovale is functionally closed in a normal healthy newborn by:
   a) 12 hours of life
   b) 24 hours of life
   c) 7 days of life
   d) 1 month of life
   e) 3 months of life

553. The ductus arteriosus is functionally closed in a normal healthy newborn by
   a) 0-5 hours of life
   b) 5-10 hours of life
   c) 10-15 hours of life
   d) 15-20 hours of life
   e) 20-25 hours of life

554. The ductus arteriosus closes when the $PO_2$ of the blood at the ductus is about:
   a) 45 mm Hg
   b) 50 mm Hg
   c) 55 mm Hg
   d) 60 mm Hg
   e) 65 mm Hg

555. The most common cardiac anomaly in patients with an autosomal dominant polycystic kidney disease is:
   a) ASD
   b) VSD

c) Mitral valve prolapse
d) Peripheral pulmonic stenosis
e) Tricuspid atresia

556. Facio-auriculo-vertebral spectum (FAVS) is associated with the following cardiac anomaly:
a) ASD
b) Tetralogy of Fallot
c) Tricuspid stenosis
d) Truncus arteriosus
e) Transposition of great arteries

557. Cat-eye syndrome has the following chromosomal abnormality:
a) Trisomy 9
b) Trisomy 21
c) Trisomy $21_P$
d) Trisomy 13
e) Trisomy $5_P$

558. The most common cause of death in pediatric patients with a heart transplantation is:
a) CMV infection
b) Candida albicans infection
c) Protozoal infection
d) Toxoplasma infection
e) S. aureus infection

559. All of the following suggestions are useful as a prevention of high blood pressure in pediatric population **except**:
a) Control obesity
b) Reduce dietary sodium intake
c) Physical exercise
d) Reduce serum cholesterol levels
e) Consume a small amount of red-wine

560. A 9-month-old child is treated with an iron for the iron deficiency anemia. The iron therapy has failed to improve the child's condition. Failure of iron therapy may be due to all of the following **except**:
a) Wrong diagnosis
b) The child does not receive iron therapy
c) Iron is given in a form that is poorly absorbed.
d) Unrecognized intestinal blood loss
e) Unrecognized 'ABO' hemolytic disease

561. A child is diagnosed to have a hereditary spherocytosis. He has a positive family history. A physical examination reveals splenomegaly. The peripheral smear reveals spherocytes. The presence of spherocytes in the blood can be confirmed by:
a) Positive Coombs test
b) RBC membrane protein analysis
c) Presence of anti-RBC antibodies
d) Osmotic fragility test
e) Measurement of RBC sizes

562. A patient with a paroxysmal nocturnal hemoglobinurea can be treated with all of the following **except**:
a) Prednisone
b) Fluoxymesterone
c) Erythropoietin
d) Splenectomy
e) Bone marrow transplantation

563. A pregnant mother has a normal platelet count. She is carrying a fetus with alloimmune thrombocytopenia. All of the following therapies are indicated **except**:
a) Monitoring of fetal platelet counts by PUBS (percutaneous umbilical blood sampling)
b) Give IVIG to the mother beginning in the second trimester.

c) IVIG should **not** be continued throughout the pregnancy.
d) If the newborn develops thrombocytopenia, one unit of washed maternal platelets should be given.
e) Genetic counseling is indicated to inform parents about the high risk of thrombocytopenia in future pregnancies.

564. The diagnosis of neonatal alloimmune thrombocytopenic purpura is made by:
a) Presence of maternal autoantibodies directed against the father's platelet
b) Presence of maternal autoantibodies directed against the baby's platelet
c) Presence of maternal autoantibodies directed against the mother's platelet
d) Presence of maternal autoantibodies directed against the baby's platelet that are shared with the mother.
e) Presence of maternal autoantibodies directed against antigens present on fetal platelets that are shared with the father.

565. The most common tissues involved in cancers of children are:
a) Nervous system
b) Embryonal
c) Connective tissue
d) Cardiac
e) Lymphohematopoietic

566. A mother noticed an abdominal mass while bathing the infant. The mass is smooth and firm. The infant is asymptomatic. Hypertension is noted in this patient. The most likely cause of hypertension in patients with a Wilms tumor is:
a) Renal artery thrombosis
b) Renal vein thrombosis
c) Renal ischemia
d) Obstructive uropathy
e) Tumor causing pressure on the aorta

567. All of the following conditions have an increased risk of Wilms tumor **except**:
a) Cataracts
b) Hemihypertrophy
c) Genitourinary anomalies
d) Pearlman syndrome
e) Sotos syndrome

568. The mode of inheritance in patients with a Gitelman syndrome is:
a) Unknown
b) Autosomal recessive
c) Autosomal dominant
d) X-linked recessive
e) X-linked dominant

569. Gitelman syndrome includes all of the following **except**:
a) Muscle spasms
b) Low serum magnesium levels
c) Hyperkalemia
d) Metabolic alkalosis
e) Very low urinary calcium levels

570. A 9-month-old boy started to crawl. The boy uses arms in a normal reciprocal fashion but drags the legs behind more as a rudder. The most likely diagnosis is:
a) Normal
b) Spastic monoplegia
c) Spastic diplegia
d) Spastic hemiplegia
e) Athetoid cerebral palsy

571. Seizure disorders are common in the following condition:
a) Spastic monoplegia
b) Spastic hemiplegia
c) Spastic diplegia

d) Spastic quadriplegia
e) Choreoathetoid cerebral palsy

572. Intellectual developments are usually normal in the following condition:
a) Spastic monoplegia
b) Spastic hemiplegia
c) Spastic diplegia
d) Spastic quadriplegia
e) Extrapyramidal cerebral palsy

573. The most common MRI finding in patients with a spastic diplegia is:
a) Bilateral lesions in globus pallidus
b) Lesions in the basal ganglia
c) Atrophic cerebral hemispheres
d) Periventricular Leukomalacia
e) Multicystic cortical encephalomalacia

574. A 3-year-old girl appears for a routine physical examination. Pediatrician is performing a basic examination of both eyes. The basic eye examination includes all of the following **except**:
a) Visual acuity
b) Tonometry
c) Visual fields
d) Assessment of the pupils
e) Ocular motility

575. All of the following vision screening tests are performed in children between 6-12 months of age **except**:
a) Red reflex test
b) Corneal light reflex test
c) Fixation and following
d) Visual acuity test
e) Occlusion of each eye separately

576. The most infants born to hepatitis B infected mothers become antigenemic by:
a) 01- month of age
b) 2-5 months of age
c) 6-9 months of age
d) 10-12 months of age
e) 13-15 months of age

577. The most important risk factor for acquisition of hepatitis B virus in children born to HBsAg-positive mother is:
a) Breast feeding
b) Kissing the infant
c) Perinatal exposure
d) Exposure to contaminated stool
e) Exposure to contaminated urine

578. Breast feeding is absolutely contraindicated in all of the following conditions **except**:
a) CMV
b) HIV
c) Active TB
d) Herpetic lesion in the breast
e) Hepatitis B infection

579. A mother wants to breast feed her newborn infant. She is HBsAg-positive. The next step in management is:
a) Give HBIG and resume breast feeding
b) Give hepatitis B vaccine and resume breast feeding
c) Resume breast feeding without HBIG
d) Resume breast feeding without hepatitis B vaccine
e) Give HBIG and hepatitis B vaccine, and resume breast feeding

580. An infant received 1 dose of HBIG and hepatitis B vaccine at birth, subsequently received 2 more doses of hepatitis B vaccine at 2 months and 6 months of age. His mother is HBsAg-positive. Postvaccination testing for HBsAg and anti-HBs should be performed at:
a) 1 month of age
b) 3 months of age
c) 7 months of age
d) 9-15 months of age
e) 15-16 months of age

581. A 9-month-old infant's hepatitis profile reveals anti-HBs positive and HBsAg-negative. The most likely interpretation is:
a) The infant should receive HBIG
b) The infant should receive one more dose of hepatitis B vaccine.
c) The infant should receive two more dose of hepatitis B vaccines.
d) The infant should receive three more dose of hepatitis B vaccines.
e) The infant is protected and does not require hepatitis B vaccines.

582. A 12-month-old infant's hepatitis profile reveals anti-HBs negative and HBsAg-positive. The most likely interpretation is:
a) Refer to a pediatric hepatologist.
b) The infant is protected
c) The infant should receive HBIG
d) The infant should receive one dose of hepatitis B vaccine.
e) The infant should receive three doses of hepatitis B vaccines.

583. Delayed presentation of right diaphragmatic hernia is associated with an infection due to the following organism:
a) Streptococcus pneumoniae
b) Group A Streptococcus
c) Group B Streptococcus
d) S. aureus
e) Pseudomonas aeruginosa

584. All of the following conditions are associated anomalies in patients with a diaphragmatic hernia **except**:
a) Malrotation of the intestine
b) Omphalocele
c) Esophageal atresia
d) CNS lesions
e) Cardiovascular lesions

585. A full term newborn appears with a severe respiratory distress and cyanosis at birth. The newborn is intubated in the delivery room. A physical examination reveals a scaphoid abdomen, decreased breath sounds in the left chest cavity, and heart sounds are audible in the right side of the chest. The most likely diagnosis is:
a) Dextrocardia
b) Left tension pneumothorax
c) Meconium aspiration
d) Diaphragmatic hernia
e) Left sided pneumonia

586. A full term newborn appears with a scaphoid abdomen. He has no respiratory distress. The rest of the physical examination is unremarkable. The most likely diagnosis is:
a) Diaphragmatic hernia
b) Hypoplastic left colon
c) Malrotation of the intestine
d) Duodenal atresia
e) The newborn has passed a large amount of Meconium at birth

587. A full term infant is admitted in NICU for a large left diaphragmatic hernia. She is placed on a mechanical ventilator. The treatment may include all of the following **except**:
a) Immediate surgical repair
b) Placement of an orogastric tube
c) Sedation

d) Paralysis
e) Modest hyperventilation

588. The most common gastrointestinal complication in patients with a diaphragmatic hernia required ECMO therapy is:
a) Decreased esophageal motility
b) Increased esophageal perforation
c) Increased gastric perforation
d) Increased jejunal perforation
e) Increased gastroesophageal reflux

589. A newborn with diaphragmatic hernia required ECMO therapy. Now, the infant is requiring 25% oxygen through a nasal canula. All of the following abnormalities can occur in this newborn due to ECMO therapy **except**:
a) Hearing loss
b) Vision difficulties
c) Seizure activities
d) Abnormal CT scan results
e) Severe perinatal asphyxia

590. An adolescent boy appears with a recurrent, severe nose bleeds for the last 6 months. He experienced several bleeding episodes more frequently for the last 1 month. He denies history of a major trauma. However, he has a long nose and often experienced minor injuries. A physical examination reveals a nasal mass. He experienced a major laceration in the right leg but the bleeding sopped spontaneously. The most likely diagnosis is:
a) Hemophilia A
b) Nasal septal hematoma
c) von Willebrand disease
d) Kiesselbach plexus bleeding
e) Juvenile nasopharyngeal angiofibroma

591. The preferred initial diagnostic study in patients with a juvenile nasopharyngeal angiofibroma is:
a) AP x-ray of the nose
b) Lateral x-ray of the nose
c) Excisional biopsy
d) Examination under anesthesia
e) CT scan with contrast

592. The preferred therapy to eradicate streptococcal carriage is:
a) Penicillin
b) Amoxicillin
c) Erythromycin
d) Clindamycin
e) Azithromycin

593. A 2-year-old boy appears with fever, sore throat, neck pain, drooling, and decreased oral intake for the last 48 hours. A physical examination reveals neck stiffness, torticollis, muffled voice, and bulging of the posterior pharyngeal wall. The most likely diagnosis is:
a) Laternal pharyngeal abscess
b) Peritonsillar abscess
c) Acute epiglotittis
d) Meningitis
e) Retropharyngeal abscess

594. A 2½-year-old girl appears with a fever, dysphagia, and enlarged cervical lymph nodes. A physical examination reveals a bulging of the left lateral pharyngeal wall and medial displacement of the left tonsil. The most likely diagnosis is:
a) Acute adenoiditis
b) Peritonsillar abscess
c) Acute pharyngitis
d) Acute left tonsillitis
e) Left lateral pharyngeal abscess

595. A 12-year-old boy appears with a fever, sore throat, dysphagia, and trismus for the last 2 days. He was diagnosed with a viral acute tonsillopharyngitis 5 days ago. A physical examination reveals a right tonsillar bulging with displacement of the uvula to the left. The most likely diagnosis is:
   a) Right peritonsillar abscess
   b) Left peritonsillar abscess
   c) Retropharyngeal abscess
   d) Acute right tonsillitis
   e) Acute uvulitis

596. A 3-year-old girl appears in the ER with a history of sudden development of fever and sore throat for the last 6 hours. She developed dysphagia, drooling, and dyspnea for the last 1 hour. The child is sitting upright, learning forward with the chin up, and opening mouth while bracing on the arms. She was completely asymptomatic prior to this episode. Her immunization status in unknown. Recently, her parents immigrated from a developing country. The most likely diagnosis is:
   a) Acute tonsillar abscess
   b) Acute epiglottitis
   c) Acute retropharyngeal abscess
   d) Acute adenoiditis
   e) Acute peritonsillar abscess

597. A 2-year-old girl appears in the ER at night with a sudden onset of barking, metallic cough, and respiratory distress for the last 2 hours. She experienced a mild coryza and hoarseness for the last 24 hours. The child is asymptomatic during the day except for the cough and hoarseness. She experienced a similar episode about 2 weeks ago. Mother denies history of fever. The child appears anxious and frightened. A physical examination reveals bilateral noisy inspiratory sounds and mild intercostal retractions. The most likely diagnosis is:
   a) Spasmodic croup
   b) Acute infections laryngitis
   c) Bacterial tracheitis
   d) Laryngomalacia
   e) Acute infectious laryngotracheobronchitis

598. The most common organism in patients with a bacterial tracheitis is:
   a) Nontypable H. influenzae
   b) Moraxella catarrhalis
   c) Streptococcus pneumoniae
   d) Pseudomonas aeruginosa
   e) Staphylococcus aureus

599. The most common organism in patients with an infectious upper airway obstruction is:
   a) Mycoplasma pneumoniae
   b) H. influenzae type b
   c) Streptococcus pyogenes
   d) Influenza viruses
   e) Parainfluenza viruses

600. The most common organism in patients with an epiglottitis and underimmunized or unimmunized is:
   a) Streptococcus pyogenes
   b) Streptococcus pneumoniae
   c) Mycoplasma pneumoniae
   d) Parainfluenza viruses
   e) Haemophilus influenzae type b

601. The most common organism in patients with an epiglottis and immunized is:
   a) Haemophilus influenzae type b
   b) Staphylococcus epidermidis
   c) Streptococcus pyogenes
   d) Pseudomonas aeruginosa
   e) Parainfluenza viruses

602. The most common organism in patients with a croup (laryngotracheobronchitis) is:
   a) Influenza type A
   b) Adenovirus
   c) Respiratory syncitial virus
   d) Mycoplasma pneumoniae
   e) Parainfluenzae viruses

603. A 3-year-old boy appears with a barking cough, hoarseness, low-grade fever, and dyspnea for the last 6 hours. The child has been suffering from rhinorrhea, mild cough, pharyngitis, and fever for the last 3 days. His condition worsens with agitation and crying. A physical examination reveals tachypnea, mild retractions, inflamed pharynx, coryza, and hoarse voice. The most likely diagnosis is:
   a) Acute epiglottitis
   b) Spasmodic croup
   c) Croup
   d) Acute pharyngitis
   e) Acute infectious laryngitis

604. All of the following statements are true about mental retardation **except**:
   a) More common in boys than in girls
   b) Prenatal causes are predominant in children with a severe mental retardation.
   c) The patients with a fragile x-syndrome appears with mental retardation.
   d) An expected mental retardation is lower than an observed mental retardation.
   e) A mild mental retardation is four times more likely to be noted in the offspring of women who did not complete the high school than in women who have graduated.

605. All of the following are true about the **daily intake** of nutrients for normal infants between 0-6 months of age **except**:
   a) Energy is 550 kcal
   b) Protein is 11 grams
   c) Carbohydrate is 60 grams
   d) Fat is 31 grams
   e) Calcium is 210 mg

606. All of the following are true about the daily intake of nutrients for normal infants between 7-12 months of age **except**:
   a) Energy is 720 kcal
   b) Protein is 11 grams
   c) Carbohydrate is 95 grams
   d) Fat is 40 grams
   e) Calcium is 270 mg

607. The generally better visual and cognitive developments in breast-fed infants than in formula-fed infants are most likely due to the following condition:
   a) Increased antibodies in breast milk
   b) Increased IgA in breast milk
   c) Increased calcium in breast milk
   d) Increased vitamins in breast milk
   e) Increased LC-PUFA in breast milk

608. A 4-month-old boy appears for a routine physical examination. The boy cries when placed on the examination table. The physician has difficulties to examine the child. The infant stops crying on his mother's lap. The boy started crying again when placed on the examination table for the second time. The next step in management is:
   a) Give formula feeding
   b) Give breast feeding
   c) Give another appointment
   d) Quickly examine the child while crying
   e) Give the child to the mother

609. A mother started breast feeding her newborn infant. The mother should wash her breasts at least:
   a) Every 2 hours
   b) Every 3 hours
   c) Every 4 hours

d) Every 6 hours
e) Every 24 hours

610. The most important factor for successful breast feeding is:
a) Happy infant
b) Relaxed infant
c) Happy and relaxed mother
d) Happy and relaxed father
e) Lots of breast milk

611. Breast feeding decreases all of the following problems **except**:
a) Colic
b) Spitting up
c) Intestinal bleeding
d) Diarrhea
e) Otitis externa

612. All of the following diseases are decreased during the first year of life when infants receive exclusively breast milk for the first 4 months of life **except**:
a) Meningitis
b) Bacteremia
c) Pneumonia
d) Jaundice
e) Otitis media

613. All of the following maternal diseases are contraindications to breast-feeding **except**:
a) Breast cancer
b) Malaria
c) Septicemia
d) Substance abuse
e) Genital culture positive for herpes

614. The most common complication in patients with a rapid correction of hyponatremia is:
a) Cerebral edema
b) Increased ADH secretion
c) Diabetes insipidus
d) Hypernatremia
e) Central pontine myelinolysis

615. The principal hormone that controls the potassium secretion is:
a) Glucocorticoids
b) ADH
c) Aldosterone
d) Insulin
e) Prolactin

616. The first electrocardiographic (ECG) changes noted in hyperkalemia is:
a) Increased PR intervals
b) Flattening of the P waves
c) Widening of the QRS complex
d) Peaking of the T waves
e) Ventricular fibrillation

617. The first manifestation in patients with a hyperkalemia is:
a) Tingling
b) Numbness
c) Weakness
d) Cardiac toxicity
e) Syncope

618. All of the following conditions can prevent a serious poisoning in children **except**:
   a) Child-resistant packaging
   b) Dose limits per container
   c) "Mr. Yuk" stickers
   d) Phone numbers of poison control centers
   e) Syrup of ipecac stored at home

619. The most important cause of poisoning in children younger than 5 years of age is:
   a) Child-resistant packaging closure did not work properly.
   b) Drugs owned by grandparents are not placed in a safety bottle.
   c) "Mr. Yuk" stickers are attracted to children.
   d) Failure of pharmacists to put the labels properly on the bottles.
   e) Child-resistant packaging is replaced by a regular packaging.

620. All of the following conditions can prevent bicycle injuries **except**:
   a) Community education programs promoting the use of helmets.
   b) Education and promotion of helmets use should extend beyond doctors office.
   c) Bicycle paths should be separated from the motor vehicle paths.
   d) Parents should buy larger helmets to prevent serious injuries.
   e) Safe bicycling training programs for children in the schools and communities are useful.

621. All of the following statements are true about teenage drivers and driving **except**:
   a) Formal driver education courses are effective in decreasing collisions.
   b) The risk of a crash is directly proportional to the number of passengers inside the car.
   c) Most of the crashes occur 4 hours before and after midnight.
   d) Graduated licensing laws decreases the fatal crashes.
   e) Impairment in driving is noted at blood alcohol levels as low as 0.05 g/dL.

622. The most common cause of cardiorespiratory arrest in children is:
   a) Cardiac failure
   b) Respiratory failure
   c) Gram-negative septic shock
   d) DIC
   e) Intracranial hemorrhages

623. All of the following medications cause vasoconstriction **except**:
   a) Phenylephrine
   b) Epinephrine
   c) Norepinephrine
   d) Amrinone
   e) High dose of dopamine

624. All of the following medications cause vasodilatation **except**:
   a) Hydralazine
   b) Nitroprusside
   c) Nitroglycerine
   d) Prostaglandin $E_1$
   e) High dose of dopamine

625. A 2-year-old boy appears with fever, watery diarrhea, shock, encephalopathy, severe DIC, renal dysfunctions, and hepatic abnormalities. The body also developed seizure activities. The most likely diagnosis is:
   a) Hypovolemic shock
   b) Septic shock
   c) Cardiogenic shock
   d) Distributive shock
   e) Hemorrhagic shock encephalopathy syndrome

626. A 2-year-old boy with a mild mental retardatation appears with mild tachypnea and dyspnea in the ER. A physical examination reveals clear breath sounds. The boy requires oxygen therapy due to worsening of the respiratory distress. Arterial blood gas reveals hypoxia and hypercarbia. One hour later, the boy is intubated and placed on a mechanical ventilator in PICU. The respiratory difficulties started after the vomiting of a large amount of food materials. The repeat bilateral crackles and intercostal retractions. The most likely chest x-ray finding is:
  a) Pneumomediastinum
  b) Pneumothorax
  c) Lobar consolidation
  d) Cardiomegaly
  e) Interstitial and alveolar edema

627. The preferred ventilator therapy for patients with an acute respiratory distress syndrome (ARDS) is:
  a) To keep the PEEP above 15 cm $H_2O$
  b) To keep the high tidal volume (10-15 mL/kg)
  c) To keep the low tidal volume (6-7 mL/kg)
  d) To keep the $PaCO_2$ between 35-45 mm Hg by increasing the tidal volume
  e) To keep the PEEP below 2 cm $H_2O$ to avoid hyperoxic injury due to free radicals

628. An air-leak syndrome includes all of the following **except**:
  a) Pneumothorax
  b) Pneumomediastinum
  c) Pneumopericardium
  d) Pneumoperitoneum
  e) Pneumatosis intestinalis

629. The most common cause of liver transplantation is:
  a) Biliary atresia
  b) Cirrhosis
  c) Wilson disease
  d) Hepatitis
  e) Liver injury

630. The organ that is most sensitive to hypoxic-ischemic injury:
  a) Cardiac
  b) Renal
  c) CNS
  d) Liver
  e) Intestine

631. The severity of carbon monoxide poisoning is determined by:
  a) $PaO_2$ levels
  b) Oxygen saturations
  c) $PacCO_2$ levels
  d) pH
  e) Carboxyhemoglobin levels

632. The syndrome of hypothermia occurs when the core body temperature is:
  a) Below 38° C
  b) Below 37° C
  c) Below 36° C
  d) Below 36.5° C
  e) Below 35° C

633. Anesthesia-related cardiac arrest is the most common in the following age group:
  a) 0-1 year of age
  b) 1-3 years of age
  c) 3-6 years of age
  d) 6-10 years of age
  e) 11-18 years of age

634. The chromosome involved in neurofibromatosis:
   a) Chromosome 7
   b) Chromosome 11
   c) Chromosome 15
   d) Chromosome 17
   e) Chromosome 19

635. The mode of inheritance in patients with a neurofibromatosis is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

636. The American Academy of Pediatrics has provided the guidelines for children with neurofibromatosis. The yearly physical examination includes all of the following **except**:
   a) Scoliosis screening
   b) Opthalmology examination
   c) Neurologic examination
   d) Developmental screening
   e) Head MRI study

637. All of the following conditions are due to a Multifactorial inheritance **except**:
   a) Neural tube defects
   b) Club feet
   c) Cleft lip
   d) Incontinentia pigmenti
   e) Cardiac septal defects

638. The mode of inheritance in patients with a hypophosphatemic ricket is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

639. The risk of recurrence in all first-degree relatives in patients with a multifactorial inheritance is:
   a) 1-2%
   b) 3-5%
   c) 6-9%
   d) 10-15%
   e) 16-25%

640. The risk of the son of an affected **female** with pyloric stenosis is:
   a) 3%
   b) 5%
   c) 15%
   d) 18%
   e) 25%

641. The risk of the son of an affected **male** with pyloric stenosis is:
   a) 1%
   b) 3%
   c) 5%
   d) 10%
   e) 15%

642. The risk of recurrence for unilateral cleft lip and palate for a couple with **one** affected child is:
   a) 1%
   b) 4%
   c) 9%
   d) 15%
   e) 20%

643. The risk of recurrence for unilateral cleft lip and palate for a couple with **two** affected child is:
   a) 5%
   b) 9%
   c) 15%
   d) 20%
   e) 25%

644. A newborn appears with a mousy or musty odor in the urine. The most likely diagnosis is:
   a) Hawkinsinuria
   b) Tyrosinemia
   c) Phenylketonuria
   d) Glutaric acidemia (type II)
   e) Multiple carboxylase deficiency

645. A newborn appears with a swimming pool odor in the urine. The most likely diagnosis is:
   a) Oasthouse urine disease
   b) Hypermethioninemia
   c) Hawkinsinuria
   d) Isovaleric acidemia
   e) Trimethylaminuria

646. A child appears with a chronic fatigue, recurrent epistaxis, bone pain, and bruise that occurs easily. A physical examination reveals a pale child with hepatosplenomegaly and generalized tenderness over the long bones. The ENT findings are normal. The laboratory studies reveal anemia, thrombocytopenia, and elevated liver function tests. The long bone x-ray reveals an Erlenmeyer flask deformity of the distal femur. The most likely diagnosis is:
   a) Tay-Sachs disease
   b) GM1 gangliosidosis
   c) Fabry disease
   d) Niemann-Pick disease type 1
   e) Gaucher disease type 1

647. The normal serum glucose level in older infants and children should be at least:
   a) 40 mg/dL
   b) 45 mg/dL
   c) 50 mg/dL
   d) 55 mg/dL
   e) 60 mg/dL

648. The glucose is transported to the brain by the following mechanism:
   a) Osmosis
   b) Na-K pump
   c) Glucose binds RBCs
   d) Diffusion
   e) Glucose binds with plasma proteins

649. All of following critical values obtained at a time of fasting hypoglycemia (plasma glucose less than 50 mg/dL) suggest hyperinsulinism **except**:
   a) Plasma insulin level is more than 2 μU/mL
   b) Plasma free fatty acids are more than 1.5 mmol/L
   c) Plasma beta-hydroxybutyrate level is less than 2.0 mmol/L
   d) Inappropriate glycemia response to glucagon, 1 mg intravenous (delta glucose is more than 40 mg/dL)
   e) Plasma insulin level is 4 μU/mL

650. A 3-year-old child has a difficulty to arouse from sleep in the morning. He did not ear properly in the previous evening. A physical examination reveals a lethargy but the rest of examination is unremarkable. The most likely diagnosis is:
    a) Meningitis
    b) Intracranial hemorrhage
    c) Reye syndrome
    d) Encephalitis
    e) Ketotic hypoglycemia

651. All of the following laboratory findings in a child suggest ketotic hypoglycemia **except**:
    a) Ketonuria
    b) Ketonemia
    c) Hypoglycemia
    d) Low plasma insulin levels
    e) Elevated plasma alanine levels

652. A newborn appears cyanotic, lethargic, and hypotensive at birth. She was born by a breech delivery with low Apgar scores. Her birth weight is 4.5 kg. A physical examination reveals a mild jaundice, mass in the flank and overlying skin discoloration, and shock. The most likely diagnosis is:
    a) Intracranial bleed
    b) Transposition of great arteries
    c) Galactosemia
    d) Adrenal hemorrhage
    e) Group B Streptococcus meningitis

653. A 34 weeks preterm infant is admitted in NICU. He has an apneic pause of 5-10 seconds followed by a burst of rapid respirations at a rate of 50-60 per minute for 10-15 seconds. The next step in management is:
    a) Oxygen by nasal canula
    b) Aminophylline
    c) Oxygen by nasal CPAP
    d) Endotracheal intubation
    e) Reassurance

654. A full-term, infant of a diabetic mother, large for gestational age newborn appears with a sudden onset of hematuria at birth. A physical examination reveals a flank mass. CBC reveals a normal WBC count and low platelet count. The most likely diagnosis is:
    a) Renal artery thrombosis
    b) Renal vein thrombosis
    c) Hydronephrosis
    d) Multicystic kidney
    e) Polycystic kidney

655. An infant of a diabetic mother appears with an abdominal distension at 12 hours of life. He passed Meconium once. He has no bilious vomiting. The abdominal x-ray reveals a dilated proximal colon. The most likely diagnosis is:
    a) Malrotation of the intestine
    b) Volvulus
    c) Duodenal atresia
    d) Jejunal atresia
    e) Small left colon syndrome

656. A full-term, LGA newborn appears with a persistent severe hypoglycemia at birth. His mother has no history diabetes. His birth weight is 14 lb 2 ounces. He was born by a cesarean section with Apgar scores 9 and 9 at 1 and 5 minutes respectively. The intravenous glucose infusion rate is increased rapidly up to 15 mg/kg/minute. The umbilical arterial and venous lines were placed. The most likely diagnosis is:
    a) Infant of a diabetic mother
    b) Group B Streptococcus sepsis
    c) Anterior pituitary tumor
    d) Galactosemia
    e) Familial hyperinsulinemic hypoglycemia

657. A severe form of familial hyperinsulinemic hypoglycemia is most likely due to the defect of the:
  a) Islet alpha cell $K_{ATP}$ channel
  b) Islet beta cell $K_{ATP}$ channel
  c) Islet gamma cell $K_{ATP}$ channel
  d) Islet delta cell $K_{ATP}$ channel
  e) Islet beta cell non-$K_{ATP}$ channel

658. A 17-year-old boy for a routine physical examination. He is asymptomatic but experienced occasional headaches. His recorded blood pressure is **above the 95th percentile** for his age. The most likely diagnosis is:
  a) Aortic coarctation
  b) Renal artery stenosis
  c) Pheochromocytoma
  d) Hyperthyroidism
  e) Suspected hypertension

659. A 16-year-old boy appears for a routine physical examination. He is asymptomatic. His recorded blood pressures are **between 90th and 95th percentiles**. He is obese. In addition to weight loss, the next step in management is:
  a) A follow-up examination after 1 month
  b) A follow-up examination after 3 months
  c) A follow-up examination after 6 months
  d) Furosemide
  e) Aldomet

660. A 13-year-old boy appears for a routine physical examination. He is asymptomatic. His recorded blood pressure is **below the 90th percentile**. The next step in management is:
  a) Echocardiography
  b) Renal ultrasonography
  c) Follow-up after 1 year
  d) Low-salt diet
  e) Blood pressure should be measured on three separate occasions.

661. A 17-year-old girl appears at 2 AM in ER with a violent behavior and psychotic ideation. The girl was asymptomatic prior to this episode. A physical examination reveals hypertension, hyperpyrexia, slowing of cardiac conduction and ventricular irritabilities. The most likely diagnosis is:
  a) Cocaine intoxication
  b) Opiates overdose
  c) Amphetamine overdose
  d) Marijuana overdose
  e) Lysergic acid diethylamide intoxication

662. A 16-year-old girl appears with a white, floccular vaginal discharge and itching for the last 7 days. The pH of the discharge is less than 4.5. The discharge has no WBCs, clue cells, and trichomonads; absence of mycelia. The most likely diagnosis is:
  a) Bacterial vaginosis
  b) Trichomonas infection
  c) Candida infection
  d) Herpes simplex virus infection
  e) Normal vaginal discharge

663. A 17-year-old girl appears with a gray, yellow homogenous vaginal discharge for the last 10 days. The pH of discharge is more than 4.5. The discharge contains clue cells, few white cells, but absence of lactobacilli. The most likely diagnosis is:
  a) Trichomonas infection
  b) Candida infection
  c) Herpes simplex virus infection
  d) Foreign body
  e) Bacterial vaginosis

664. The preferred screening test for patients with complement defects is:
  a) C 3
  b) C 4

c) C 1
d) C 2
e) $CH_{50}$

665. The most common cause of an abnormal $CH_{50}$ value is:
a) Properdin deficiencies
b) C 1 deficiencies
c) C 3 deficiencies
d) C 4 deficiencies
e) Delay in transporting the specimen to the laboratory

666. The most common B-cell defect is:
a) Selective IgA deficiency
b) IgG deficiency
c) IgM deficiency
d) IgE deficiency
e) IgD deficiency

667. Chediak-Higashi syndrome includes all of the following **except**:
a) Autosomal dominant
b) Bleeding disorders
c) Peripheral neuropathy
d) Partial oculocutaneous albinism
e) Defective degranulation of neutrophils

668. The preferred screening test for patients with a chronic granulomatous disease is:
a) $G_6PD$ qualitative assay
b) RBC $G_6PD$ activity
c) Dihydrorhodamine 123 fluorescence (DHR) test
d) Ability of neutrophils to kill microorganisms
e) Ability of monocytes to kill microorganisms

669. The most common type of reaction to sulfonamide drug is:
a) Macular
b) Papular
c) Maculopapular
d) Pustular
e) Urticarial

670. The insect allergy is mediated by:
a) IgG
b) IgM
c) IgA
d) IgE
e) IgD

671. A child appears with a bilateral itchy eyes, injected conjunctivae, watery discharge, and chemosis of conjunctivae. This condition is most commonly associated with:
a) Allergic rhinitis
b) Gonococcal infection
c) Sinusitis
d) Chlamydia infection
e) Nasolacrimal duct obstruction

672. A 17-year-old girl appears with a severe itching, tearing, and burning of both eyes throughout the year. A physical examination reveals injected and chemotic bulbar conjunctivae, and eyelid eczema that spreads to the periorbital skin and cheeks with an erythematous, thick, dry scaly lesion. This condition is most commonly associated with:
a) Sinusitis
b) Otitis media

c) Allergic food reaction
d) Atopic dermatitis
e) Allergic drug reaction

673. The common complication in patients with an atopic keratoconjunctivitis is:
a) Pseudomonas conjunctivitis
b) Candida infection
c) Subconjunctival hemorrhage
d) Corneal infection
e) Staphylococcal blepharitis

674. The most common cause of pyogenic infection of the skin is:
a) Staphylococcal epidermidis
b) Staphylococcal aureus
c) Staphylococcal hemolyticus
d) Staphylococcal pyogenes
e) Pseudomonas aeruginosa

675. The preferred therapy in patients with a **confirmed** group B Streptococcus infection is:
a) Ampicillin
b) Gentamicin
c) Penicillin G
d) Ampicillin and cefotaxime
e) Ampicillin and gentamicin

676. The preferred initial therapy in patients with a neonatal sepsis is:
a) Penicillin G
b) Ampicillin
c) Penicillin and gentamicin
d) Ampicillin and gentamicin
e) Ampicillin and cefotaxime

677. All of the following are characteristic features of early onset neonatal listeriosis **except**:
a) Term delivery
b) Sepsis
c) Mortality rate is more than 30%
d) Mean age of onset is 1.5 days
e) Positive maternal Listeria culture

678. All of the following are characteristic features of **late onset** of neonatal listeriosis **except**:
a) Meningitis
b) Normal birthweight
c) Mortality rate is more than 25%
d) Mean age of onset is 14.2 days
e) Negative maternal Listeria culture

679. A child appears with fever, pharyngitis, weakness, vomiting, diarrhea, myalgias, and headache for the last 24 hours. A physical examination reveals petechiae, purpura fulminans, and hypotension. The child's clinical condition worsens over the last 2 hours. The blood culture most likely reveals the following organism:
a) Neisseria gonorrhoeae
b) Streptococcus pneumoniae
c) Neisseria meningitidis
d) Staphylococcus aureus
e) Pseudomonas aeruginosa

680. The most common clinical manifestation in patients with an invasive meningococcal disease is:
a) Fever
b) Petechiae
c) Purpura fulminans

d) Hypotension
e) Vomiting

681. The definitive diagnosis of invasive meningococcal disease is established by isolation of the organism from all of the following sites **except**:
a) Blood
b) CSF
c) Synovial fluid
d) Pleural fluid
e) Nasopharynx

682. The preferred therapy for hospitalized patients with a meningococcal disease is:
a) Penicillin G
b) Chloramphenicol
c) Vancomycin
d) Cefuroxime
e) Ticarcillin

683. A 10-year-old girl appears with a severe lethargy, anorexia, abdominal pain, diarrhea with a pea soup consistency followed by constipation, and unremitting high fever that increases in a stepwise fashion. On the 7th day of illness, a maculopapular rash appears on the lower chest and abdomen. The rash is discrete, erythematous, slightly raised, blanch on pressure, and 1-5 mm in diameter. A physical examination reveals relative bradycardia, hepatosplenomegaly, tender and diffusely distended abdomen. The most likely diagnosis is:
a) E. coli sepsis
b) Salmonella Typhi sepsis
c) Shigella dysenteriae infection
d) Campylobacter jejuni infection
e) Nontyphoidal Salmonella infection

684. The preferred diagnostic test in patients with an early in the course of enteric fever is:
a) Blood culture
b) Stool culture
c) Urine culture
d) CSF culture
e) Bone marrow culture

685. The most sensitive culture in patients with a n enteric fever is:
a) Blood
b) Stool
c) Urine
d) CSF
e) Bone marrow

686. The most common type of organism in patients with a bacillary dysentery is:
a) Shigella dysenteriae
b) Shigella flexneri
c) Shigella boydii
d) Shigella sonnei
e) Salmonella ser Typhi

687. A child appears with a severe abdominal pain, vomiting, painful defecation, urgency, and high fever for the last 2 days. She ate a regular food at home. However, she went to the party with a group of children and ate salads. Two other children have the similar symptoms. A physical examination reveals a toxic looking child, abdominal distension, abdominal tenderness, hyperactive intestinal sounds, and tender rectum. The most likely diagnosis is:
a) Shigella sonnei infection
b) E. coli infection
c) Vibrio cholerae infection
d) Campylobacter jejuni infection
e) Yersinia enterocolitica infection

688. The most common extraintestinal manifestation in patients with a bacillary dysentery is:
   a) Cardiac
   b) Hepatic
   c) Pancreatic
   d) Neurologic
   e) Renal

689. The most common cause of neurologic manifestations in patients with a bacillary dysentery is:
   a) Shiga toxin
   b) Hopocalcemia
   c) Hyponatremia
   d) Increased ADH secretion
   e) Unknown

690. The preferred therapy in children with intrathoracic tuberculosis (pulmonary TB and/or hilar lymphadenopathy) is:
   a) A regimen of INH and rifampin for 9 months.
   b) A regimen of INH and ethambutol for 9 months.
   c) A regimen of INH and rifampin for 6 months plus first 2 months of treatment with pyrazinamide.
   d) A regimen of rifampin and pyrazinamide for 6 months.
   e) A regimen of INH and pyrazinamide for 6 months.

691. The preferred therapy in HIV-seropositive children with a drug-susceptible tuberculosis is:
   a) A regimen of INH, rifampin (RIF), pyrazinamide (PZA) for the first 2 months followed by INH and PZA for a total duration of at least 9 months.
   b) A regimen of INH, RIF, PZA for the first 2 months followed by RIF and PZA for a total duration of at least 6 months.
   c) A regimen of INH and RIF for the first 2 months followed by INH and PZA for a total duration of at least 12 months.
   d) A regimen of INH and PZA for the first 3 months followed by INH and RIF for a total duration of at least 9 months.
   e) A regimen of INH, RIF and PZA for the first 2 months followed by INH and RIF for a total duration of at least 9 months.

692. All of the following statements are true about drug-resistant tuberculosis **except**:
   a) The most drug resistance in children is primary.
   b) The major cause of secondary drug resistance is poor compliance with the medication.
   c) A noncompliance with one drug is more common cause of secondary resistance than failure to take all medications.
   d) The major cause of primary drug resistance is an inadequate treatment regimen prescribed by the doctor.
   e) A successful therapy in a drug-resistant tuberculosis should include at least two bactericidal drugs.

693. The preferred therapy in children with INH-resistance tuberculosis is:
   a) A regimen of RIF, PZA, and ethambutol (EMB) for 9 months.
   b) A regimen of RIF and PZA for the first 3 months followed by RIF, PZA, and EBM for at least 9 months.
   c) A regimen of PZA and EMB for the first 2 moths followed by PZA, EMB, and RIF for at least 6 months.
   d) A regimen of RIF, PZA, and EMB for 6 months.
   e) A regiment of streptomycin for the first 1 month followed by RIF, PZA, and EMB for at least 9 months.

694. A child appears with mild fever, cough, and sore throat for the last 7 days. A physical examination reveals pharyngeal redness, bilateral rales, and mild wheezing. His mother denies history of asthma. He was healthy prior to this episode. The chest x-ray reveals bilateral diffuse infiltrates and mild pleural effusions. The complete blood count is normal without a left shift. The most likely diagnosis is:
   a) Newly diagnosed asthma
   b) Streptococcus pneumonia
   c) Staphylococcus aureus pneumonia
   d) HIV-infected pneumonia
   e) Chlamydia pneumonia

695. The most common site of infection in newborns with untreated maternal genital chlamydia infections is:
   a) Rectum
   b) Lungs
   c) Nasopharynx
   d) Oropharynx
   e) Eyes

696. The clinical features in patients with a congenital rubella syndrome include all of the following **except**:
   a) 'Blueberry muffin' skin lesions
   b) Cataracts
   c) Patent ductus venosus
   d) Sensorineural hearing loss
   e) Intrauterine growth retardation

697. The behavioral management in children with enuresis includes all of the following **except**:
   a) An alarm clock can be used to wake the child every 2-3 hours after falling sleep.
   b) A repeatedly waking the child to take him/her to the bathroom is useful.
   c) The child should urinate before goes to bed.
   d) Punishment or humiliation of the child should **not** be accepted.
   e) A reward should be given to the child for being dry at night.

698. A diagnosis of encopresis is made in children after the chronological (or equivalent developmental level) age:
   a) 3 years
   b) 4 years
   c) 5 years
   d) 6 years
   e) 7 years

699. In addition to infant formulas, complementary foods should be started between:
   a) 1-2 months
   b) 2-4 months
   c) 4-6 months
   d) 6-9 months
   e) 9-12 months

700. Solid foods should be started in infants in the following order:
   a) Cereals, eggs, fruits, meats, and vegetables
   b) Cereals, meats, vegetables, fruits, and eggs
   c) Cereals, vegetables, eggs, meats, and fruits
   d) Meats, eggs, cereals, vegetables, and fruits
   e) Cereals, vegetables, fruits, meats, and eggs

701. A 2½ month-old-girl appears with a sudden onset of loud cry for the last 2 hours. The girl has no fever and no URI symptoms. A physical examination reveals cold feet, clenched hands, flushed face, tense abdomen that is also distended, and legs are drawn on the abdomen. The most likely diagnosis is:
   a) Intussuception
   b) Meckel diverticulum
   c) Acute appendicitis
   d) Intestinal obstruction
   e) Colic

702. All of the following therapies and prevention strategies are useful in infants with a colic **except**:
   a) Hold the infant upright
   b) Prone across the lap
   c) Hot water bottle
   d) Suppository
   e) Carminatives are used before feeding.

703. The effect of vitamin K deficiency is the following:
   a) Jaundice
   b) Bleeding
   c) Thrombosis
   d) Poor wound healing
   e) Photophobia

704. The effect of vitamin K excess in preterm infants is:
   a) Bleeding
   b) Jaundice
   c) Gluteal hematoma
   d) Anemia
   e) Thrombosis

705. A 7-day-old newborn appears with a Tetany for the last 6 hours. The newborn was born by a NSVD with Apgar scores 9 and 9 at 1 and 5 minutes respectively. He went home at 2 days of life. His serum bilirubin level was 9.5 at 48 hours of life. The mother did not go for a prenatal care. CBC reveals a normal result. The serum calcium level is low. However, the mother's serum calcium level was high. The most likely diagnosis is:
   a) Hyperparathyroidism in the neonate
   b) Hypoparathyroidism in the mother
   c) Hypocalcemic rickets
   d) Nutritional hypocalcemia
   e) Hypoparathyroidism in the neonate

706. The preferred therapy in patients with a metabolic acidosis is:
   a) Sodium bicarbonate
   b) THAM solution
   c) Sodium citrate
   d) Excessive fluid therapy
   e) Treat the underlying cause

707. All of the following conditions require sodium carbonate therapy **except**:
   a) Salicylate poisoning
   b) Acute renal failure
   c) Ethylene glycol poisoning
   d) Diabetic ketoacidosis
   e) Pyruvate carboxylase deficiency

708. The preferred initial therapy in patients with a metabolic acidosis and respiratory acidosis is:
   a) Sodium bicarbonate
   b) Potassium citrate
   c) Hemodialysis
   d) Treat the underlying metabolic cause
   e) Ventilator therapy to correct the respiratory acidosis

709. The **lowest limit** of a normal systolic blood pressure in a full-term newborn is:
   a) 45 mm Hg
   b) 50 mm Hg
   c) 60 mm Hg
   d) 70 mm Hg
   e) 80 mm Hg

710. The **lowest limit** of a normal systolic BP from 1 month to 1 year of age is:
   a) 65 mm Hg
   b) 70 mm Hg
   c) 75 mm Hg
   d) 80 mm Hg
   e) 85 mm Hg

711. The **lowest limit** of a normal systolic BP in a 5-year-old child is:
   a) 75 mm Hg
   b) 80 mm Hg
   c) 85 mm Hg
   d) 90 mm Hg
   e) 95 mm Hg

712. The **lowest limit** of a normal systolic BP in a child older than 10 years of age is:
   a) 80 mm Hg
   b) 85 mm Hg
   c) 90 mm Hg
   d) 95 mm Hg
   e) 100 mm Hg

713. A routine physical examination in a 12-year-old boy reveals hart rate 85 per minute, systolic BP 135 mm Hg, diastolic BP 85 mm Hg, respiratory rate 18 per minute, and the rest of the examination is unremarkable. Occasionally, he complains of headaches. The next step in management is:
   a) Exercise
   b) Weight loss
   c) Low-salt diet
   d) Furosemide
   e) Reassurance

714. A full-term newborn is born by a NSVD with Apgar scores are 9 and 9 at 1 and 5 minutes respectively. Both the baby and the mother are asymptomatic. The mother wanted to breast feed the baby. Breast feeding should begin preferabl.y.
   a) Within 1 hour
   b) Within 2 hour
   c) Within 3 hour
   d) Within 4 hour
   e) Within 6 hour

715. A 7-day-old girl passes a stool every 48 hours. She is receiving infant formulas. She is taking 2 ounces every 4 hours. Stools have a normal consistency. She was born full-term and the birth weight was 7 lb 6 oz. The next step in management is:
   a) Sugar water
   b) Glycerine suppository
   c) Barium enema study
   d) Reassurance
   e) Rectal stimulation with a finger

716. A full-term newborn infant did not pass a stool for the last 72 hours. His abdomen is mildly distended. The infant was kept NP and receiving intravenous fluids. A physical examination should include the following:
   a) Neurologic examination
   b) Cardiac examination
   c) Hepatic examination
   d) Verterbral examination
   e) Rectal examination

717. All of the following laboratory findings are noted in rickets **except**:
   a) Normal serum calcium levels
   b) Elevated serum phosphorus level
   c) Elevated serum alkaline phosphatase levels
   d) Elevated urinary cyclic AMP levels
   e) Reduced serum 25-hydroxycholecalciferol levels

718. A child appears with a history of vomiting and diarrhea for the last 24 hours. He has a **mild** dehydration. The following findings is noted during the physical examination:
   a) Lethargy
   b) Sunken eyes
   c) Dry mucous membranes
   d) Normal
   e) Delayed capillary refill

719. A child appears with a history of vomiting and diarrhea for the last 3 days. He has a **moderate** dehydration. All of the following findings are present **except**:
   a) Decreased tears
   b) Mild tenting of the skin

c) Pale
d) Irritable
e) Hypotension

720. A child appears with a history of severe vomiting and diarrhea for the last 5 days. She was able to tolerate a small amount of oral rehydrating solutions. The condition worsens for the last 24 hours. She has a **severe** dehydration. All of the following findings are noted **except**:
a) Mottled skin
b) Hypotension
c) Little urine output
d) Weak pulses
e) Parched mucous membranes

721. The pedestrian injuries predominantly occur in the following age group:
a) 1-4 years of age
b) 5-9 years of age
c) 10-12 years of age
d) 13-15 years of age
e) 16-18 years of age

722. An infant weighing **less than 20 lbs** should be placed inside a motor vehicle:
a) In the front seat with an infant seat
b) In the front seat on the mother's lap with a seat belt
c) In the rear seat facing backward
d) In the rear seat facing forward
e) In the rear seat on the mother's lap

723. Children and older toddlers weighing **more than 20 lbs** should be placed in a motor vehicle:
a) In the front seat with a seat belt
b) In the front seat on a mother's lap and seat belt
c) In the rear seat facing backward
d) In the rear seat facing forward
e) In the rear seat on the mother's lap

724. The youngest age in which a child is allowed to seat in the front seat of a motor vehicle is:
a) 10 years of age
b) 11 years of age
c) 12 years of age
d) 13 years of age
e) 14 years of age

725. A child appears in the ER with a shock and decreased urinary output. A physical examination reveals cool extremities, tachypnea, increasing obtundation, delayed (more than 2-3 seconds) capillary filling time, absence of tachycardia, and decreased cardiac output. The most likely diagnosis is:
a) Hypovolemic shock
b) Cardiogenic shock
c) Early septic shock
d) Obstructive shock
e) Distributive shock

726. A child appears in the ER with a shock but adequate reveals warm extremities, tachycardia, bounding peripheral pulses and tachypnea. ABG reveals a mild metabolic acidosis. The most likely diagnosis is:
a) Hypovolemic shock
b) Septic shock
c) Cardiogenic shock
d) Obstructive shock
e) Distributive shock

727. A child appears in the ER with a shock, decreased urinary output, and altered mental status. A physical examination reveals tachycardia, tachypnea, cool extremities, dry mucous membranes, poor skin turgor, and hypotension. The most likely diagnosis is:
a) Hypovolemic shock
b) Obstructive shock
c) Distributive shock
d) Cardiogenic shock
e) Late septic shock

728. The most common complication occurs in patients **during induction of anesthesia** is:
a) Vomiting
b) Bronchospasms
c) Laryngospasms
d) Aspiration pneumonia
e) Aspiration of gastric contents

729. The most common postoperative complication **after anesthesia** is:
a) Apnea
b) Hypothermia
c) Malignant hyperthermia
d) Atelactasis
e) Nausea and vomiting

730. All of the following are clinical features of neurologic malignant syndrome **except**:
a) Muscle rigidity
b) High fever
c) Hypercarbia
d) Metabolic alkalosis
e) Hemodynamic collapse

731. A 7-year-old boy has appendicitis. He is going for appendectomy. His mother died during anesthesia that was introduced for hysterectomy. The boy developed high fever, metabolic acidosis, hypercarbia, muscle rigidity, and cardiovascular collapse, during anesthesia. The management includes all of the following **except**:
a) Discontinue inhalation anesthesia
b) Give succinylcholine
c) Sodium bicarbonate
d) Sodium dantrolene
e) Mechanical ventilation

732. All of the following clinical features are diagnostic of neurofibromatosis 1 **except**:
a) Optic glioma and iris hamartomas
b) Freckling in the axillary regions and the child's father has neurofibromatosis 1.
c) Six cafe au lait macules more than 5 mm in greatest diameter in a prepubertal child and sphenoid dysplasia.
d) Six cafe au lait macules more than 5 mm in greatest diameter in a postpubertal adolescent and his/her mother has neurofibromatosis 1.

733. The following syndrome is due to deletion of **paternally** derived chromosome 15:
a) Angelman syndrome
b) Down syndrome
c) Prader-Willi syndrome
d) Turner syndrome
e) Noonan syndrome

734. The following syndrome is due to deletion of **maternally** derived chromosome 15:
a) William syndrome
b) Rubinstein-Taybi syndrome
c) Angelman syndrome
d) Klinefelter syndrome
e) Velocardiofacial syndrome

735. A low birthweight newborn appears with a prominent occiput, small chin, low-set ears, rocker-bottom feet, closed fists with index finger overlapping the 3rd digit and the 5th digit overlapping the 4th. The most likely diagnosis is:
   a) Trisomy 8
   b) Trisomy 13
   c) Trisomy 15
   d) Trisomy 18
   e) Trisomy 21

736. A newborn appears pale in a routine physical examination. All of the following conditions can produce a pale appearance **except**:
   a) Anemia
   b) Edema
   c) Shock
   d) Asphyxia
   e) Premature infants

737. A routine newborn physical examination reveals retinal hemorrhages. The newborn is most commonly delivered by a:
   a) Low-forcep delivery
   b) NSVD
   c) Vacuum-assisted
   d) Cesarean section
   e) Mid-forcep delivery

738. All retinal hemorrhage cases in newborns resolve by:
   a) 2 weeks of age
   b) 3 weeks of age
   c) 4 weeks of age
   d) 6 weeks of age
   e) 8 weeks of age

739. A normal pupillary reflex first appear:
   a) After 24-25 weeks of gestation
   b) After 26-27 weeks of gestation
   c) After 28-30 weeks of gestation
   d) After 31-32 weeks of gestation
   e) After 32-34 weeks of gestation

740. The most common site of connections in conjoined twins is:
   a) Craniopagus
   b) Omphalopagus
   c) Thoracopagus
   d) Incomplete duplication
   e) Thoraco-omphalopagus

741. The most of the liquid in the lungs in newborn is removed by:
   a) Lymphatics
   b) Thoracic compression
   c) Swallowed
   d) Aspirated from the Oropharynx
   e) Pulmonary circulation

742. The usual opening pressures needed to inflate the airless lungs at birth are from:
   a) 1-4 cm $H_2O$
   b) 5-9 cm $H_2O$
   c) 10-20 cm $H_2O$
   d) 21-60 cm $H_2O$
   e) 61-75 cm $H_2O$

743. A full-term infant did not pass Meconium by 36 hours of age. All of the following conditions can cause this **except**:
a) Intestinal atresia
b) Intestinal stenosis
c) Meconium ileus
d) Meconium plugs
e) Strictures after necrotizing enterocolitis

744. A newborn was not constipated at birth. He developed constipation during the 1st month of life. All of the following conditions can manifest that **except**:
a) Hypothyroidism
b) Anal stenosis
c) Atretic colon
d) Strictures after NEC
e) Short-segment congenital aganglionic megacolon

745. The preferred therapy for patients with a Listeria monocytogenes infection is:
a) Penicillin
b) Ampicillin
c) Cefotaxime
d) Nafcillin
e) Gentamicin

746. Maternal therapies or vaccinations can prevent or reduce all of the following neonatal infections **except**:
a) Hepatitis B
b) Rubella
c) Varicella zoster
d) CMV
e) Toxoplasmosis

747. A 14-year-old boy appears with a history of behavioral changes for the last 1 year. His mother is worried. His mother was divorced about 1year ago. The boy is engaged in more physical fights resulting in injuries. He has been drinking heavily, using drugs, and carrying weapons. A physical examination reveals a decreased testicular volume and an increased muscle mass. His height is between 10th and 25th percentile than is decreased from a previous 25th and 50th percentile. His weight is above 90 th percentile that is increased from a previous 25th and 50th percentile. The most likely diagnosis is:
a) He is injecting heroin routinely.
b) He has been exercising heavily for the last 1 year.
c) He has growth hormone deficiency.
d) He has a cerebral gigantism.
e) He has been taking anabolic steroids.

748. A 16-year-old girl appears with a fever, lower abdominal pain, dysmenorrhea, and abnormal vaginal discharge for the last 7 day. She denies sexual activities. A physical examination reveals a lower abdominal tenderness, adnexal tenderness, and cervical motion tenderness. The most likely diagnosis is:
a) Twisted ovarian cysts
b) Ectopic pregnancy
c) Urinary tract infection
d) Genital ulcer syndromes
e) Pelvic inflammatory disease

749. The most common organism in younger adolescents with a pelvic inflammatory disease is:
a) Mycoplasma hominis
b) Group B Streptococci
c) Gardnerella vaginalis
d) E. coli
e) Neisseria gonorrhoeae

750. The peripheral blood smear in a child with sore throat large, vacuolated lymphocytes. The most likely diagnosis is:
a) Thyrotoxicosis
b) Addison disease

c) Tuberculosis
d) Brucellosis
e) Infectious mononucleosis

751. A male child has properdin deficiency. The child is susceptible to develop:
a) Glomerulonephritis
b) Familial Mediterranean fever
c) Hereditary angioedema
d) B-cell malignancy
e) Meningococcal meningitis

752. The mode of inheritance in patients with a hereditary angioedema is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

753. The most common skin abnormality in children with an allergy is:
a) Urticaria
b) Atopic dermatitis
c) Angioedema
d) Keratosis pilaris
e) Xerosis

754. The preferred diagnostic study in patients with a sinus disease is:
a) AP x-ray of the sinuses
b) Lateral x-ray of the sinuses
c) PA x-ray of the sinuses
d) CT-scan of the sinuses
e) Ultrasonography of the sinuses

755. The following medical condition is commonly noted in patients with an asthma:
a) Gastroesophageal reflux
b) RSV pneumonia
c) Streptococcus pneumonia
d) Cardiomyopathy
e) Thoracic cage deformities

756. A child appears with a sudden onset of flushing, urticaria, dry staccato cough, dyspnea, wheezing, tightness in the throat, oral pruritus, sneezing, and nasal congestion. The treatment includes all of the following **except**:
a) Corticosteroids
b) Oxygen
c) $H_1$ antihistamine antagonist
d) Oral hydration therapy
e) Intramuscular epinephrine

757. The most cases of anaphylaxis is due to:
a) IgG-mediated
b) IgA-mediated
c) IgM-mediated
d) IgD-mediated
e) IgE-mediated

758. The plasma beta-tryptase level remains elevated in anaphylactic reactions due to all of the following conditions **except**:
a) Foods
b) Latex
c) IVIG

d) Fire ants
e) Penicillins

759. An adolescent boy appears with a pain in the flower back. His lower spine remains straight when he bends forward. The x-ray of both sacroiliac joint reveals a severe sclerosis, erosion of joint margins, and apparent widening of the joint space. The most likely diagnosis is:
a) Reactive arthritis
b) Post traumatic arthritis
c) Ankylosing spondylitis
d) Reactive arthritis
e) Psoriatic arthritis

760. A 7-year-old appears with URI syndrome and pain in the right hip joint for the last 5 days. He denies history of a trauma. A physical examination reveals a tenderness in the right hip joint. CBC and ESR values are normal. X-ray of the right hip reveals a widening of the joint space. The next step in management is:
a) Orthopedic consultation
b) Hip spica casting
c) Azithromycin
d) Ampicillin
e) Cefuroxime

761. A child appears with rashes and multiple joints arthritis that resembles serum sickness. The girl is not immunized properly. The most likely diagnosis is:
a) Rubella-associated arthropathy
b) Poststreptococcal arthritis
c) Shigella-associated arthritis
d) Salmonella-associated arthritis
e) Arthritis-dermatitis syndrome

762. A child developed arthralgias of the knees and hands after the rubella vaccination. The Postvaccination arthritis due to rubella usually occurs:
a) 1-3 days after vaccination
b) 4-9 days after vaccination
c) 10-28 days after vaccination
d) 29-60 days after vaccination
e) 61-90 days after vaccination

763. All of the following statements are true in patients with a rubella-associated arthropathy **except**:
a) More common after natural rubella infections than after rubella vaccinations.
b) Arthralgias commonly occurs in knees and hands.
c) Common in preadolescent children
d) Arthralgias usually begin within 7 days of onset of the rash due to a natural infections.
e) Typically occurs in young women.

764. A 14-year-old girl is diagnosed with SLE (systemic lupus erythematosus). She is receiving corticosteroids therapy. All of the following are side effects of corticosteroids therapy **except**:
a) Gastritis
b) Cataracts
c) Hypertension
d) Osteopetrosis
e) Cushingoid features

765. The most specific diagnostic laboratory test in patients with a SLE is:
a) Positive LE cell preparation
b) Elevated ANA titers
c) Decreased $CH_{50}$
d) Anti-DNA antibody to native DNA in abnormal titer
e) Anti-Sm-presence of antibody to Sm nuclear antigen

766. All of the following hematologic findings are noted in patients with a SLE **except**:
  a) Anemia of chronic disease
  b) Leukopenia
  c) Lymphopenia
  d) Thrombocytosis
  e) Coombs-positive hemolytic anemia

767. All of the following clinical features are characteristics of SLE except:
  a) Erosive arthritis
  b) Malar rash
  c) Photosensitivity
  d) Oral ulcers
  e) Serositis

768. Rheumatic fever is commonly associated with the following infection:
  a) Group A Streptococcus lower respiratory tract infection.
  b) Streptococcus pneumoniae upper respiratory infection.
  c) Adenovirus lower respiratory tract infection
  d) Staphylococcus aureus upper respiratory tract infection
  e) Group A Streptococcus upper respiratory tract infection

769. The following type of group A Streptococcus does not cause a recurrent rheumatic fever:
  a) M type 1
  b) M type 3
  c) M type 4
  d) M type 5
  e) M type 6

770. The following serotypes of group A Streptococcus more frequently cause rheumatic fever **except**:
  a) M type 24
  b) M type 18
  c) M type 6
  d) M type 5
  e) M type 2

771. The **major** manifestations of Jones criteria to diagnose rheumatic fever include all of the following **except**:
  a) Carditis
  b) Polyarthritis
  c) Erythema marginatum
  d) Subcutaneous nodules
  e) Fever

772. The **minor** manifestations of Jones criteria to diagnose rheumatic fever include all of the following **except**:
  a) Fever
  b) Arthralgia
  c) Prolonged PR intervals
  d) Elevated ESR
  e) Positive rapid streptococcal antigen test

773. Type III GBS (group B Streptococcus) is the most virulent type among all other types. The virulent factor is most likely due to:
  a) Sialic acid (N-acetylneuraminic acid) component of capsular polysaccharide.
  b) N-acetylneuraminic component of capsular polysaccharide
  c) Galactose component of capsular polysaccharide
  d) Glucose component of capsular polysaccharide
  e) Rhamnose component of capsular polysaccharide

774. The most common type of organism in patients with an Enterococcus infection is:
  a) Enterococcus faecium
  b) Enterococcus faecalis

c) Enterococcus gallinarium
d) Enterococcus cassiliflavus
e) Nontypable enterococcus

775. The preferred therapy in patients with an invasive (e.g., sepsis, meningitis, or endocarditis) enterococcus disease that is resistant to penicillin:
a) Gentamicin and ampicillin
b) Vancomycin and doxycycline
c) Ticarcillin and gentamicin
d) Azithromycin
e) Vancomycin and gentamicin

776. A child developed painless, soft mass in the neck a dental procedure. The mass fluctuates and ultimately develops fistula. The discharge contains sulfur granules. The most likely organism is:
a) Staphylococcus aureus
b) Staphylococcus epidermidis
c) Pseudomonas aeruginosa
d) Candida albicans
e) Actinomyces israelii

777. The preferred therapy in patients with an actinomyces is:
a) Actinomyces israelii
b) Propionibacterium propionicum
c) Actinomyces odontolyticus
d) Actinomyces meyeri
e) Actinomyces naeslundii

778. The preferred therapy in patients with an actinomyces is:
a) Penicillin
b) Tetracycline
c) Clindamycin
d) Chloramphenicol
e) Carbapenems

779. The child appears during the spring season with a fever, vomiting, diarrhea, and abdominal pain for the last 5 days. He also developed rash 2 days ago. The rashes are pale, discrete, rose-red blanching macules and maculopapules. They appears on ankles, wrists, and lower extremities. His mother denied tick bites. A physical examination reveals hepatosplenomegaly. The child is admitted in a hospital. The following day, the rash becomes more Petechial and hemorrhagic. The most likely diagnosis is:
a) Pseudomonas sepsis
b) Staphylococcus aureus infection
c) E. coli sepsis
d) Rickettsia rickettsii infection
e) Herpes simplex virus infection

780. A fulminant Rocky Mountain spotted fever resulting in death can occur in patients with the following condition:
a) Unimmunized children
b) Hepatitis B infection
c) Sickle cell trait
d) Thalassemia trait
e) Glucose-6-phosphate dehydrogenase deficiency

781. The preferred therapy in patients with a RMSF (Rocky Mountain spotted fever) is:
a) Doxycycline
b) Tetracycline
c) Chloramphenicol
d) Erythromycin
e) Cephalosporins

782. A child appears with a photophobia, dry cough, coryza, conjunctivitis, and mild fever for the last 2 days. A physical examination reveals a transve line of conjunctival inflammation and the line is sharply demarcated along the eyelid margin. The most likely diagnosis is:
a) Rubella
b) Glaucoma
c) Bacteria conjunctivitis
d) Measles
e) Chlamydia conjunctivitis

783. A Koplik spot is a pathognomonic sign of measles. Koplik spots usually appear as follows:
a) Grayish white dots appear opposite the lower molars.
b) Bluish white dots appear opposite the upper molars.
c) Pinkish white dots appear opposite the lower molars.
d) Grayish yellow dots appear opposite the lower molars.
e) Yellowish white dots appear opposite the lower molars.

784. Koplik spots consist of the following:
a) Polymorphonuclear leukocytes and pus cells
b) Lymphocytes and pus cells
c) Eosinophils and pus cells
d) Serous exudates and endothelial cells
e) Mucous exudates and lymphocytes

785. The preferred diagnostic study in patients with a herpes simplex virus encephalitis beyond the neonatal period is:
a) MRI of the brain
b) CT scan of the brain
c) PCR analysis of CSF
d) Brain biopsy
e) Analysis of CSF cells

786. The patients with a sarcoidosis usually develop the following condition:
a) Hypocalciuria
b) Hypermagnesemia
c) Hypercalciuria
d) Hyperkalemia
e) Hypocalcemia

787. The most common cause of neonatal hyperparathyroidism is:
a) Maternal hypercalcemia
b) Maternal hyperparathyroidism
c) Parathyroid adenoma
d) Pituitary tumor
e) Absence of functional calcium-sensing receptors in the parathyroid glands

788. The mode of inheritance in patients with a neonatal hyperparathyroidism is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

789. A 2-year-old girl has a history of persistent thumb sucking. Her mother is worried. The next step in management:
a) Put a bandage in the thumb
b) Put a gloves in the hand
c) Use a noxious agent
d) Don’t give food until she stops thumb sucking
e) Reassurance

790. A 4-year-old boy appears with a history of thumb sucking during the day time. The most common problem due to thumb sucking is:
a) Thumb ulcers
b) Thumb atrophy
c) Thumb infections
d) Hypoplastic thumb nails
e) Malalignment of the teeth

791. The preferred therapy in patients with a thumb sucking is:
a) Use of noxious agent (e.g., bitter salves)
b) Praise for substitute behaviors
c) A mild physical punishment is useful.
d) Scolding is better than physical punishment.
e) Expose the child to other children who do not appreciate thumb sucking.

792. A 3-year-old boy has difficulty in playing rhyming games and learning the names for numbers and letters. He does not like to read. However, he enjoys when his mother reads to him. He refuses to read aloud to his parents. The most likely associated with this disorder is:
a) Myopia
b) Hypermetropia
c) Cataracts
d) Optic glioma
e) Attention-deficit/hyperactivity disorder

793. The most common neurobehavioral disorder in children is:
a) Dyslexia
b) Depression due to brain tumor
c) Attention-deficit/hyperactivity disorder
d) Agitation after lead poisoning
e) Rage attacks after brain injury

794. The preferred therapy in patients with dyslexia that is **diagnosed early in life** is:
a) Accomodation
b) Remediation
c) Ignore
d) Use force consistently
e) Reassurance

795. The preferred therapy in patients with dyslexia that is diagnosed late (i.e., high school, college, and graduate school) is:
a) Ignore
b) Encouragement
c) Remediation
d) Accomodation
e) Reassurance

796. A 17-year-old boy is taking SAT examination. He has dyslexia. All of the following accomodations during examination are useful **except**:
a) Recorded questions
b) Recorded answers
c) Multiple choice tests
d) Two choice tests
e) A separate quiet room for taking test

797. A 6-year-old girl appears in the ER with a history of sexual abuse. All of the following physical findings are suggestive of sexual abuse **except**:
a) Vaginal pain
b) Vaginal bleeding
c) Vaginal discharge

d) Rectal pain
e) Lightly pigmented hair along the medial border of the labia

798. All of the following pertinent history suggests sexual abuse in children **except**:
a) Constipation
b) Dysuria
c) Enuresis
d) Encopresis
e) Diarrhea

799. A 7-year-old girl appears in the ER with a history of sexual abuse. All of the physical findings have diagnostic values **except**:
a) A moderately enlarged opening size of the hymen
b) Redness in the urethra
c) Bruise on the labia minora
d) Redness and abrasion inside the mouth
e) Bite marks on the neck

800. A 4-year-old girl appears in the ER with history of a sexual abuse. The initial examination is performed in a supine position that reveals erythema on the labia minora. The next step in management is:
a) The child should be re-examined in the prone belly position.
b) The child should be re-examined in the left lateral position.
c) The child should be re-examined in the right lateral position.
d) The child should be re-examined in the supine position under general anesthesia.
e) The child should be re-examined in the prone knee-chest position.

801. A routine physical examination of the child reveals pulsation of the aorta. He is thin and asymptomatic. The next step in management is:
a) Ultrasonography of the aorta
b) Measure four extremities BP
c) Aortic angiography
d) Abdominal x-ray
e) Reassurance

802. A routine physical examination of the child reveals a thin projection of the right lobe of the liver in the right lateral abdomen. The child is active and asymptomatic. The next step in management is:
a) Liver function tests
b) Ultrasonography of the liver
c) Hepatobiliary scan
d) MRI of the liver
e) Reassurance

803. A 3½ week-old breast-fed infant appears with history no stool for the last 10 days. She was passing stools normally prior to this episode. Her birth weight was 8 lbs 10 ounces. Her present weight is 9 lbs 2 ounces. She has been receiving breast milk only. She has a strong suck. She was born by NSVD with Apgar scores were 9 and 9 at 1 and 5 minutes respectively. She was discharged home on 2nd day of life. A physical examination reveals a normal, soft abdomen, and stools are palpable in the descending colon. The next step in management is:
a) Abdominal x-ray
b) Barium enema
c) Upper GI series
d) Ultrasonography of the colon
e) Reassurance

804. A 5-month-old girl appears with a history of vomiting after each feeding for the last 2 months. She has been drinking infant formulas since birth. Her birth weight was 6 lbs 6 ounces. Her present weight is 14 lbs. She drinks infant formulas 5-6 ounces every 4 hours. She vomits 15-30 ml after each feeding. She has been eating rice cereal for the last 1 month. A physical examination reveals a normal, soft abdomen, and the rest of the physical examination is unremarkable. The following statement is true about infants with similar problems:
a) 40% of cases are resolved by 6 months of age.
b) 60% of cases are resolved by 8 months of age.

c) 70% of cases are resolved by 10 months of age.
d) 80% of cases are resolved by 11 months of age.
e) 90% of cases are resolved by 12 months of age.

805. The most common congenital laryngeal anomaly in infant is:
a) Laryngomalacia
b) Subglottic stenosis
c) Subglottic hemangioma
d) Laryngeal web
e) Vocal cord paralysis

806. A full term newborn appears with **low pitched**, inspiratory stridor at birth. The stridor worsens with crying, agitation, and feeding. The newborn is NPO and receiving intravenous fluids. He was born by an elective cesarean section with Apgar scores are 8 and 9 at 1 and 5 minutes respectively. The most likely diagnosis is:
a) Vocal cord paralysis
b) Laryngeal web
c) Laryngeal atresia
d) Laryngeal nodule
e) Laryngomalacia

807. The preferred diagnostic study in infants with laryngomalacia is:
a) AP x-ray of the neck
b) Lateral x-ray of the neck
c) Flexible laryngoscopy
d) Barium swallow of the esophagus
e) Flexible bronchoscopy

808. A 2-day-old newborn male appears with cyanosis and tachypnea for the last 2 hours. He was born by NSVD with Apgar scores are 8 and 9 at 1 and 5 minutes respectively. The physical examination reveals a grade 2/6 systolic murmur at the left sternal border. The arterial $PO_2$ is 80 in hyperoxia test. The oxygen saturation values are as follows: RA 58%, RV 58%, LA 100%, LV 94%, pulmonary artery 58%, and ascending aorta 80%. The volume of blood passes through different structures are as follows: RA 3 $L/min/m^2$, RV 3 $L/min/m^2$, LA 2 $L/min/m^2$, LV 2 $L/min/m^2$, pulmonary artery 2 $L/min/m^2$, and ascending aorta 3 $L/min/m^2$. The newborn is receiving PGE1 infusions. The preferred surgical therapy is:
a) Switch operation (Jatene)
b) Modified Blalock-Taussig shunt
c) Starnes procedure
d) Norwood operation
e) Fontan procedure

809. A newborn appears with cyanosis and respiratory distress within the 1st hour of life. She was born by NSVD with Apgar score of 7 and 8 at 1 and 5 minutes respectively. The physical examination reveals a soft systolic ejection murmur at the midleft sternal border and single, loud 2nd heart sound. The arterial $PO_2$ is 60 in hyperoxia test. The oxygen saturation values are as follows: both vena cava 58%, RA 73%, RV 73%, LA 90%, LV 90%, pulmonary artery 90%, right and left pulmonary arteries 80%, pulmonary veins 100%, and ascending aorta 73%. The newborn is placed on a mechanical ventilator and $PGE_1$ infusions have started. The preferred initial surgical therapy is:
a) Norwood operation
b) Glenn operation
c) Fontan procedure
d) Aortic valvuloplasty
e) Rashkind procedure

810. The pulmonary arteriovenous fistulas are most commonly present is:
a) Williams syndrome
b) Down syndrome
c) Turner syndrome
d) Prader-Willi syndrome
e) Osler-Weber-Rendu syndrome

811. A newborn appears with bradyarrythmias. ECG reveals that the P-P intervals are constant, the P-R intervals increase progressively until a P wave is not conducted; following a dropped beat, the P-R interval is shorter. The most likely diagnosis is:
a) Long Q-T syndrome
b) 1st-degree heart block
c) Mobitz type I
d) Mobitz type II
e) 3rd-degree heart block

812. A child appears with history of syncope. He is otherwise healthy. ECG reveals that occasional atrial beats are not conducted to the ventricles. The most likely diagnosis is:
a) 1st-degree heart block
b) Wenckebach type heart block
c) Mobitz type II heart block
d) 3rd-degree heart block
e) Normal variant

813. All of the following are manifestations of Fanconi anemia **except**:
a) Hypopigmentation
b) Absent thumb
c) Short stature
d) Pancytopenia
e) Aplastic bone marrow

814. The mode of inheritance in patients with Fanconi anemia is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

815. Aplastic anemia can occur in all of the following conditions **except**:
a) Down syndrome
b) Seckel syndrome
c) Dubowitz syndrome
d) Dyskeratosis congenita
e) Turner syndrome

816. The most common mode of inheritance in patients with nephrogenic diabetes insipidus is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

817. A 14-day-old male newborn appears with fever, irritability, crying, poor weight gain, and polyuria. A physical examination reveals mild dehydration. SMA 6 reveals hypernatremia, high BUN, and elevated creatinine. The serum osmolality values is 300 mOsm/kg and the urine osmolality value is 280 mOsm/kg. The most likely diagnosis is:
a) Renal tubular acidosis
b) Nephrogenic diabetic insipidus
c) Bartter syndrome
d) Gitelman syndrome
e) Hypernatremia dehydration

818. All of the following are clinical manifestations of Potter syndrome **except**:
a) Unilateral renal agenesis
b) Low set ears
c) Broad and flat nose
d) Widely separated eyes
e) Limb abnormalities

819. The rate of urine production at term is about:
- a) 40 mL/hour
- b) 45 mL/hour
- c) 51 mL/hour
- d) 60 mL/hour
- e) 70 mL/hour

820. The glomerular filtration rate at term is about:
- a) 15 mL/min/1.73 $m^2$
- b) 20 mL/min/1.73 $m^2$
- c) 25 mL/min/1.73 $m^2$
- d) 30 mL/min/1.73 $m^2$
- e) 35 mL/min/1.73 $m^2$

821. The glomerular filtration rate triples since birth in full term infants by:
- a) 1 month of age
- b) 3 months of age
- c) 6 months of age
- d) 9 months of age
- e) 12 months of age

822. All of the following are manifestations of septo-optic dysplasia **except**:
- a) Nystagmus
- b) Visual impairments
- c) Optic nerve dysplasia
- d) Large anterior pituitary gland
- e) Incomplete development of septum pellucidum

823. In girls, McCune-Albright syndrome appears with all of the following clinical and laboratory features **except**:
- a) Early vaginal bleeding
- b) Precocious puberty
- c) Decreased level of estradiol
- d) Decreased levels of LH
- e) Does not respond to GnRH stimulation

824. In boys, McCune-Albright syndrome, all of the following statements are true **except**:
- a) Precious puberty is more common.
- b) Testicular enlargements are fairly symmetric.
- c) Phallic enlargement occurs after testicular enlargement.
- d) During puberty, the response to GnRH becomes pubertal.
- e)

825. The preferred therapy in patients with McCune-Albright syndrome whose puberty has shifted from a pseudo (gonadotropin-independent) to true (gonadotropin-dependent) mechanism is:
- a) Estrogen
- b) Progesterone
- c) FSH
- d) Short-acting analogs of GnRH
- e) Long-acting analogs of GnRH

826. A 3-week-old girl appears wit sudden onset of tetany and seizure activities. She was born by NSVD with Apgar score of 8 and 9 at 1 and 5 minutes respectively. She is receiving breast milk since birth. She was completely asymptomatic prior to this episode. The serum calcium level is 5 mg/dL and ionized calcium level is markedly reduced. The serum magnesium level is 1.2 mg/dL. The next step in management is:
- a) Intravenous calcium
- b) Calcium gluconate
- c) PTH
- d) Magnesium
- e) 1, 25-dihydroxycholecalciferol

827. A 9-year-old boy appears with headache, palpitations, and dizziness for the last 2 hours. He experienced similar symptoms periodically for the last 6 months. The symptoms subside spontaneously. He is not taking any medication. He denies URI symptoms and history of trauma. The symptoms occurred more frequently for the last 1 month. A physical examination is unremarkable. His vital signs are as follows: T 98.4° F, HR 130 per minute, RR 20 per minute, and blood pressure 150/95. The boy's symptoms subsided after 1 hour. The repeat vital signs become normal (HR 90/minute, BP 110/65). The most likely diagnosis is:
   a) Pheochromocytoma
   b) Virilizing adrenocortical tumor
   c) Cushing syndrome
   d) Essential hypertension
   e) Pituitary tumor

828. The preferred diagnostic study in patients with pheochromocytomas that are localized and small in sizes is:
   a) CT-scan
   b) Ultrasonography
   c) Total catecholamine levels in urine are elevated.
   d) MBIG ($^{131}$ I-Metaiodobenzylguanidine)
   e) Total vanillylmandelic acid (VMA) levels in urine are elevated.

829. The preferred curative therapy in patients with pheochromocytoma is:
   a) Radiation therapy
   b) Chemotherapy
   c) Surgical removal of tumors
   d) Alpha-adrenergic blocker
   e) Beta-adrenergic blocker

830. The most important complication during surgery and within 48 hours postoperatively is:
   a) Intracerebral edema
   b) Pulmonary edema
   c) Cardiac failure
   d) GI bleeding
   e) Acute hypotension

831. The clinical manifestation of Sertoli cell-only syndrome is:
   a) Small testes
   b) Hypothyroidism
   c) Hypoparathyroidism
   d) Hypoadrenalism
   e) Large penis

832. The most common chromosomal abnormality in patients with Klinefelter syndrome is:
   a) 47, XYY
   b) 46, XX / 47, XXY
   c) 46, XY / 48, XXYY
   d) 47, XXY
   e) 45, X / 46, XY / 47, XXY

833. A newborn female appears with edema of the dorsa of the hands and feet, loose skinfolds at the nape of the neck, low birthweight, and decreased length. The most common cardiac anomaly in this patient is:
   a) Aortic coarctation
   b) Pulmonic stenosis
   c) Aortic stenosis
   d) Mitral valve prolapse
   e) Nonstenotic bicuspid aortic valve

834. A girl with a short stature is referred to an endocrinologist. The following investigation should be performed in girls with short statures:
   a) Serum FSH levels
   b) Echocardiography
   c) Ultrasonography of the kidney

d) Ultrasonography of the ovary
e) Chromosome analysis

835. WAGR syndrome includes all of the following **except**:
a) Wilms tumor
b) Aniridia
c) GU malformations
d) Retinoblastoma
e) Deletion of chromosome 11

836. The diagnostic criterion in patients with a diabetes mellitus is:
a) Random plasma glucose level is 190 mg/dL.
b) Fasting plasma glucose level is 125 mg/dL.
c) 2-hour plasma glucose during oral glucose tolerance test is 195 mg/dL.
d) Fasting blood glucose level is 127 mg/dL
e) Random plasma glucose level is 199 mg/dL

837. The diagnostic criterion in patients with an impaired glucose tolerance (IGT) is:
a) Fasting glucose level is 107 mg/dL
b) 2-hour plasma glucose during the oral glucose tolerance test (OGTT) is 135 mg/dL.
c) Fasting glucose level is 105 mg/dL.
d) Fasting glucose level is 109 mg/dL.
e) Fasting glucose level is 110 mg/dL.

838. The palmer grasp begins at:
a) 28 weeks gestational age
b) 30 weeks gestational age
c) 32 weeks gestational age
d) 34 weeks gestational age
e) 36 weeks gestational age

839. The parachute reflex begins at:
a) 5-6 months of age
b) 7-8 months of age
c) 9-10 months of age
d) 11-12 months of age
e) 12-15 months of age

840. The Moro reflex begins at:
a) 24-27 weeks gestational age
b) 28-32 weeks gestational age
c) 33-34 weeks gestational age
d) 35-36 weeks gestational age
e) 37-40 weeks gestational age

841. The tonic neck reflex begins at:
a) 34 weeks gestational age
b) 35 weeks gestational age
c) 36 weeks gestational age
d) 37 weeks gestational age
e) 38 weeks gestational age

842. The rooting reflex begins at:
a) 30 weeks gestational age
b) 32 weeks gestational age
c) 34 weeks gestational age
d) 36 weeks gestational age
e) 38 weeks gestational age

843. The following neonatal seizure has the worst prognosis:
 a) Hypoglycemia seizures
 b) Hypocalcemia seizures
 c) Drug withdrawal seizures
 d) Hypernatremic seizures
 e) Hypoxic-ischemic encephalopathy producing seizures

844. The most common cause of neonatal seizure is:
 a) Pyridoxine dependency
 b) Hypoglycemia
 c) Subarachnoid hemorrhage
 d) Nonketotic hyperglycinemia
 e) Hypoxic-ischemic encephalopathy

845. A 2-hour-old newborn male infant appears with generalized clonic seizures. He was born by a cesarean section due to fetal distress. His Apgar scores are 4 and 8 at 1 and 5 minutes respectively. The intravenous phenobarbital (20 mg/kg) loading doe is given. The boy has episodes of seizure activities every 5 to 10 minutes intervals. The seizure activities could not be stopped despite repeated doses of phenobarbital, phenytoin, and lorazepam therapies. He is receiving intravenous glucose. His serum glucose level is 50 mg/dL. The next step in management:
 a) Intravenous calcium
 b) Boluses of intravenous glucose
 c) Oral morphine
 d) Neurosurgical consult
 e) Intravenous pyridoxine

846. The mode of inheritance in patients with pyridoxine dependency seizures is:
 a) Autosomal recessive
 b) Autosomal dominant
 c) X-linked recessive
 d) X-linked dominant
 e) Multifactorial

847. The following opthalmologic finding is common in patients with neurofibromatosis:
 a) Leukokoria
 b) Heterochromia
 c) Microcornea
 d) Lisch nodules
 e) Cataract

848. The newborn's routine eye examination reveals unilateral leukocoria. The most likely diagnosis is:
 a) Cataract
 b) CMV
 c) Toxoplasmosis
 d) Retinoblastoma
 e) Retinal hemorrhages

849. The newborn's routine eye examination reveals heterochromia. The most likely diagnosis is:
 a) Turner syndrome
 b) Adie syndrome
 c) Block-Sulzberger syndrome
 d) Down syndrome
 e) Waardenburg syndrome

850. The characteristic late manifestation of congenital syphylis is:
 a) Jaundice
 b) Periosteitis
 c) Metaphysitis
 d) Hepatitis
 e) Interstitial keratitis

851. A 14-day-old girl appears for a routine physical examination. She is drinking infant formulas 2 ounces every 4 hours. Her mother stated that she sleeps very well. The loud music does not disturb her sleep. However, when she cries, she does not stop even with her mother's voice. She sleeps most of the time. She passes tools 3-4 times per day and has normal soft stools. The mother is happy. The next step in management is:
   a) Increase the feed during crying
   b) Thyroid function tests
   c) Reduce the feed to keep her awake
   d) Hearing test
   e) Reassurance

852. Which of the following child needs audiologic evaluation?
   a) A 24-month-old girl can point to body parts when asked and is able to play audiometry.
   b) A 12-month-old boy can localize to sound presented in the horizontal plane only.
   c) An 18-month-old girl can follow simple directions without gestural or other visual cues.
   d) A 15-month-old boy can point towards an unexpected sound, to familiar objects, or faces when asked.
   e) A 6-month-old girl can begin to imitate sounds in her own speech repertoire.

853. The most common organism in patients with perichondritis and chondritis is:
   a) Staphylococcus aureus
   b) E. coli
   c) Staphylococcus epidermidis
   d) Pseudomonas aeruginosa
   e) Group A Streptococcus

854. The most common organism in patients with acute cellulitis of the external ear is:
   a) Staphylococcus epidermidis
   b) Staphylococcus aureus
   c) Herpes simplex virus
   d) Pseudomonas aeruginosa
   e) Group A Staphylococcus

855. The most common organism in patients with bullous myringitis is:
   a) Moraxella catarrhalis
   b) Group A Staphylococcus
   c) Staphylococcus pneumoniae
   d) Pseudomonas aeruginosa
   e) Nontypable Haemophilus influenzae

856. The most common organism in patients with furunculosis is:
   a) Staphylococcus aureus
   b) Staphylococcus epidermidis
   c) Staphylococcus pneumoniae
   d) E. coli
   e) Group A Staphylococcus

857. The most common organism in patients with otitis externa is:
   a) Pseudomonas aeruginosa
   b) Staphylococcus aureus
   c) Proteus mirabilis
   d) Enterobacter aerogenes
   e) Klebsiella pneumoniae

858. The following organism causes Ramsay Hunt syndrome:
   a) Candida albicans
   b) Staphylococcus aureus
   c) Pseudomonas aeruginosa
   d) Varicella-zoster virus
   e) Herpes simplex virus

859. A 16-year-old boy experienced a puncture wound through the sole of his right sneaker about 7 days ago. A physical examination reveals swollen, red, tender, edematous areas around the puncture wound and greenish pus. The most likely organism is:
a) Staphylococcus aureus
b) Staphylococcus epidermidis
c) Group A Streptococcus
d) Streptococcus pneumoniae
e) Pseudomonas aeruginosa

860. The most common cause of in-toeing in children **2 years of age or older** is:
a) Internal femoral torsion
b) Internal tibial torsion
c) External femoral torsion
d) External tibial torsion
e) Genu varum

861. The most common cause of in-toeing in children **younger than 2 years of age** is:
a) Internal tibial torsion
b) External tibial torsion
c) Internal femoral torsion
d) External femoral torsion
e) Genu valgum

862. A 3-year-old girl appears with history sitting "W" style position. The diagnosis is usually made by:
a) X-ray of the femur
b) X-ray of the pelvis
c) Ultrasonography of the femur
d) CT-scan of the femur
e) Clinical measurements

863. The preferred therapy in patients with an internal femoral torsion is:
a) Nighttime orthoses
b) Daytime twister cable
c) Femoral cast
d) Femoral splint
e) Observation

864. The preferred therapy in patients with an internal tibial torsion is:
a) Observation
b) Orthoses
c) Cast
d) Splint
e) Pinning

865. All of the following features are noted in patients with Williams syndrome **except**:
a) Large mandible
b) Prominent maxilla
c) Small peglike teeth with caries
d) Upper lip has a Cupid's blow curve
e) Upturned nose

866. The sudden death in patients with Williams syndrome is due to:
a) Aortic rupture
b) Arrythmias
c) Rupture atrial septum
d) Rupture ventricular septum
e) Rupture pulmonary artery

867. All of the following cardiac defects can occur in patients with Williams syndrome **except**:
   a) Supravalvular aortic dilatation
   b) Coronary artery stenosis
   c) Hypoplasia of the aorta
   d) Peripheral pulmonic stenosis
   e) VSD

868. The preferred therapy in patients with persistent idiopathic hypercalcemia is:
   a) High phosphate diet
   b) Low phosphate diet
   c) Magnesium therapy
   d) Biphosphonates
   e) Intravenous fluids and furosemide

869. All of he following therapies are indicated in patients with caustics poisoning **except**:
   a) Activated charcoals
   b) Endoscopy
   c) No emesis
   d) No lavage
   e) Skin and eye should be flushed with water

870. All of the following are characteristic features of Aicardi syndrome **except**:
   a) Coloboma of the optic disc
   b) Seizures
   c) Hemivertebrae
   d) Mental retardation
   e) Mostly occurs in male

871. Aicardi syndrome typically associated with the following feature:
   a) Agenesis of the corpus callosum
   b) Hydronephrosis
   c) Pulmonic stenosis
   d) Hepatoblastoma
   e) Pancreatic pseudocyst

**Match the following electrolyte abnormalities and clinical conditions (872-876)**:

872. Na 122, cl 109, K 4.9, Gl 78, BUN 9, and urine specific gravity 1011
873. Na 121, cl 85, K 4.3, Gl 82, BUN 25, and urine specific gravity 1025
874. Na 124, cl 107, K 3.7, Gl 680, BUN 9, and urine specific gravity 1012
875. Na 160, cl 121, K 3.9, Gl 75, BUN 24, and urine specific gravity 1023
876. Na 120, cl 90, K 4.1, Gl 84, BUN 3, and urine specific gravity 1030

   a) Increased ADH secretion
   b) Laboratory error
   c) Hypernatremic dehydration
   d) Hyponatremic dehydration
   e) Pseudohyponatremia

**Match the following electrolyte abnormalities and clinical conditions (877-881)**:

877. Na 154, cl 120, K 3.8, Gl 92, BUN 26, and urine specific gravity 1001
878. Na 165, cl 132, K 3.6, Gl 81, BUN 8, and urine specific gravity 1009
879. Na 124, cl 95, K 3.5, Gl 76, BUN 9, and urine specific gravity 1011
880. Na 127, cl 96, K 7.9, Gl 82, BUN 29, and urine specific gravity 1025
881. Na 123, cl 93, K 6.9, Gl 87, BUN 16, and urine specific gravity 1010

   a) Salt poisoning
   b) Diabetes insipidus

c) Acute renal failure
d) Congenital adrenal hyperplasia
e) Maintenance salt was not given

**Match the following hemoglobin levels and diseases (882-884)**:

882. Elevated hemoglobin A1
883. Elevated hemoglobin A1C
884. Elevated hemoglobin A2

a) Down syndrome
b) Diabetes mellitus
c) Wilson disease
d) Reye syndrome
e) Renal failure

**Match the following audiometric evaluations and different conditions (885-888)**:

885. Hearing is close to "zero" decibel and air conduction is better than bone conduction.
886. Bone conduction is better (at least 15 decibel) than air conduction, usually less than 20 decibel hearing loss.
887. Bone bone conduction and air conduction have a precipitous drop, usually more than 60 decibel.
888. Initially bone conduction is better than air conduction, followed by precipitous drop in both conductions.

a) CMV
b) Mixed hearing loss
c) Normal
d) Allergic rhinitis
e) Otitis media

**Match the following skin lesions and different diseases (889-893)**:

889. Erythema marginatum
890. Erythema migrans
891. Erythema multiforme like lesion
892. Erythema multiforme
893. Erythema nodosum

a) Cefaclor
b) Kawasaki disease
c) Rheumatic fever
d) Sarcoidosis
e) Lyme disease

**Match the following growth parameters and different organs (894-898)**:

894. Reach adult size at 6 years, continue to grow until adolescence then recedes to adult size.
895. 90% of adult size is achieved by 5 years of age.
896. Rapid growth in first 5 years, average growth from 5 to 10 years, and again rapid growth from 10-18 years.
897. Slow growth in first 12 years, then rapid growth from 12-18 years.
898. Rapid growth in first 5 years (like general) and involutes rapidly in adolescence.

a) Neural tissue
b) Lymphoid tissue
c) Thymus
d) General
e) Genital

**Match the following growth findings and different conditions (899-903)**:

899. A child remains short until puberty, then increases height, and bone age is less than chronological age.
900. A child remains short for rest of life. Both parents are short. Bone age is the same as chronological age.
901. A child suddenly stops growing and then, started to grow again after medication.
902. A child suddenly stops growing and the, started to grow after surgery.
903. A child suddenly stops growing, has electrolyte imbalance, and then, started to grow after medication.

a) Congenital adrenal hyperplasia
b) Craniopharyngioma
c) Constitutional short stature
d) Hypothyroidism
e) Genetic short stature

**Match the following arterial blood gases and different conditions (904-908)**:

904. pH 7.21, $PCO_2$ 62, $PO_2$ 90, bicarbonate 34
905. pH 7.58, $PCO_2$ 17, $PO_2$ 95, bicarbonate 11
906. pH 7.56, $PCO_2$ 36, $PO_2$ 88, bicarbonate 37
907. pH 7.19, $PCO_2$ 18, $PO_2$ 49, bicarbonate 12
908. pH 7.36, $PCO_2$ 61, $PO_2$ 92, bicarbonate 35

a) Respiratory alkalosis
b) Respiratory acidosis
c) Metabolic alkalosis
d) Metabolic acidosis
e) Compensated respiratory acidosis

**Match the following visual pathway lesions and findings (909-913)**:

909. Unilateral vision loss
910. Bitemporal hemianopsia
911. Left homonymous hemianopsia
912. Right homonymous hemianopsia
913. Partial homonymous hemianopsia

a) Left optic tract
b) Lateral geniculate body
c) Optic chiasma
d) Right optic tract
e) Optic nerve

**Match the following hematologic findings and different conditions (914-918)**:

914. Hemoglobin A 95%, hemoglobin A2 3%, hemoglobin F less than 1%, hemoglobin S 0%, normal hemoglobin, and normal MCV
915. Hemoglobin A 0%, hemoglobin A2 normal, hemoglobin F 8%, hemoglobin S 92%, hemoglobin 7, and normal MCV
916. Hemoglobin A 55%, hemoglobin A2 normal, hemoglobin F normal, hemoglobin S 45%, normal hemoglobin, and normal MCV
917. Hemoglobin A 0%, hemoglobin A2 0%, hemoglobin F 1%, hemoglobin S 50%, hemoglobin C 50%, and hemoglobin 9.
918. Hemoglobin A 28%, hemoglobin A2 normal, increased ratio A2/A, hemoglobin F 72%, hemoglobin S 0%, hemoglobin 4, and MCV 45.

a) Sickle cell disease
b) Hemoglobin SC disease
c) Normal
d) Thalassemia major
e) Sickle cell trait

**Match the following hematologic findings and different conditions (919-923)**:

919. Hemoglobin A 90%, hemoglobin A2 5%, hemoglobin F 5%, hemoglobin S 0%, hemoglobin 10, and MCV 60
920. Hemoglobin A 96%, hemoglobin A2 3%, hemoglobin F 0.5%, hemoglobin S 0%, hemoglobin 14, and MCV 65
921. Hemoglobin A 98%, hemoglobin A2 2%, hemoglobin F 0%, hemoglobin S 0%, hemoglobin 9, and MCV 70
922. Hemoglobin A 25%, hemoglobin A2 9%, hemoglobin S 66%, hemoglobin 8, and MCV 72.
923. Hemoglobin A 0%, hemoglobin A2 4%, hemoglobin S 96%, Bart hemoglobin increased, and low MCV.

a) Beta thalassemia minor
b) Sickle alpha thalassemia
c) Iron deficiency anemia
d) Sickle beta thalassemia
e) Alpha thalassemia trait

**Match the flow-volume curve in different respiratory conditions (924-928)**:

924. Bronchopulmonary dysplasia
925. Respiratory distress syndrome
926. Epiglottitis
927. Laryngomalacia
928. Malacia of intrathoracic trachea

a) Reduced inspiratory and expiratory phases looks like a sandwich
b) Reduced inspiratory flow and plateau of inspiratory loop
c) Reduced and flattened expiratory loop
d) Reduced inspiratory and expiratory phases looks like a small normal curve
e) Prolonged expiration phase

**Match the following diseases with peripheral blood smears (929-933)**:

929. Iron deficiency anemia
930. G6PD deficiency
931. Folic acid deficiency
932. Thalassemia major
933. Hemolytic uremic syndrome

a) Target cells
b) Schizocytes
c) Macrocytes
d) Heinz bodies
e) Hypochromic microcytic cells

**Match the time and different components of human brain growth (934-936)**:

934. Brain DNA
935. Brain weight
936. Brain cholesterol

a) Peaks around 4-5 months of age
b) Peaks around 2 years of age
c) Peaks within few months after birth
d) Peaks around 1 year of age
e) Double peaks (prenatal and postnatal)

**Match the following CSF findings and different diseases (937-941)**:

937. Bacterial meningitis
938. Tuberculous meningitis
939. Fungal meningitis
940. Viral meningitis
941. Brain abscess
    a) Increased lymphocytes, increased protein, normal glucose
    b) Increased polymorphs, increased protein, decreased glucose
    c) Increased monocytes, increased protein, decreased glucose
    d) Increased lymphocytes, increased protein, decreased glucose
    e) First, increased lymphocytes then polymorphs, increased protein, and normal glucose

**Match the caloric distribution in different foods (942-944)**:

942. Human milk
943. Cow's milk
944. Food

a) Protein 15%, fat 35%, carbohydrate 55%
b) Protein 15%, fat 25%, carbohydrate 65%
c) Protein 25%, fat 35%, carbohydrate 40%
d) Protein 6%, fat 50%, carbohydrate 44%
e) Protein 20%, fat 50%, carbohydrate 30%

**Match the most common organisms in different diseases (945-949)**:

945. Bronchiolitis
946. Croup
947. Cold
948. Pharyngitis
949. Bacterial tracheitis

a) Staphylococcus aureus
b) Viruses
c) RSV
d) Parainfluenza viruses
e) Rhinoviruses

**Match the different kinds of milk and their characteristic (950-954)**:

950. Condensed milk
951. Pasteurized milk
952. Homogenized milk
953. Evaporated milk
954. Goat's milk

a) Low in vitamin D, iron, sodium, and folic acid. More in K, chloride, linoleic and arachidonic acids
b) Softer casein and less allergenic lactalbumin
c) Fat broken down and easily digested
d) Bacteria is destroyed; casein broken down
e) High in carbohydrates; low in fat and proteins

**Match the characteristic of sinusitis and site of pain/headache (955-959)**:

955. Frontal
956. Sphenoidal
957. Anterior ethmoidal
958. Posterior ethmoidal
959. Maxillary

a) Suboccipital area
b) Temporal area and eyes
c) Trigeminal area particularly mastoid
d) Over maxilla and teeth
e) Above and medial to eyes

**Match the glucose levels and insulin doses in type 1 diabetes mellitus (960-964)**:

960. Increased glucose level in morning
961. Increased glucose level at noon
962. Increased glucose level in evening
963. Increased glucose level in night
964. Increased glucose level in night

a) Decrease this P.M. dose of regular insulin
b) Increase last P.M. dose of NPH insulin
c) Increase this A.M. dose of regular insulin
d) Increase this A.M. dose of NPH insulin
e) Increase this P.M. dose of regular insulin

**Match different types of cough and diseases (965-969)**:

965. Tracheitis
966. Chlamydia pneumonitis
967. Laryngeal obstruction
968. Habit cough
969. Allergic reaction

a) Cough with stridor
b) Disappears with sleep
c) Brassy
d) Noctural cough
e) Staccato

**Match different characteristics of cough and diseases (970-974)**:

970. Bronchitis
971. Cystic fibrosis
972. Reactive airways
973. Pertussis airway
974. Asthma

a) Most severe on awakening in morning
b) With vigorous exercise
c) Paroxysmal
d) Tight (wheezy)
e) Loose (discontinuous), productive

**Match the congenital infections and anatomical defects (975-979)**:

975. Rubella
976. CMV
977. VZV (Varicella zoster virus)
978. HSV (herpes simplex virus)
979. Parvovirus

a) Limb hypoplasia
b) Hydrops
c) Cataracts
d) Hydrocephalus
e) Periventricular calcifications

**Match the congenital infections with the following findings (980-983)**:

980. Coxsackievirus
981. CMV
982. Plasmodium falciparum
983. Enteroviruses

a) Deafness
b) Carditis
c) Rhinitis
d) Nephrotic syndrome

**Match the following items with iron absorptions and utilizations (984-987)**:

984. Vitamin C
985. Tea
986. Protein
987. Coffee

a) Increased iron absorption from GI tract
b) Decreased iron absorption form GI tract
c) No effects
d) Increased iron utilization in RBCs
e) Decreased iron utilization in RBCs

**Match the following findings and different conditions (988-992)**:

988. Apnea
989. Omphalocele
990. Small intestine fore shortened
991. Bilirubin encephalopathy
992. Glaucoma

a) Gastroschisis
b) Sensorineural hearing loss
c) Prostaglandin
d) Sturge-Weber disease
e) Beckwith-Wiedemann syndrome

**Match the following syndromes with different clinical findings (993-997)**:

993. Rubinstein-Taybi syndrome
994. Turner syndrome
995. Treacher Collins syndrome
996. Cri-du-chat syndrome
997. Wolf-Hirschhorn syndrome

a) Conductive hearing loss
b) Broad thumbs
c) Moonlike face
d) "Greek helmet" facies
e) Cystic hygroma

**Match the congenital heart diseases and surgical procedures (998-1002)**:

998. Transposition of great arteries
999. Hypoplastic left heart syndrome
1000. Tetralogy of Fallot
1001. Ebstein anomaly
1002. Aortic stenosis

a) Blalock-Taussig shunt
b) Norwood procedure
c) Balloon valvuloplasty
d) Starnes procedure
e) Arterial switch (Jatene)

**Match the following syndromes with different clinical findings (1003-1007)**:

1003. Aortic stenosis
1004. Pulmonic stenosis
1005. Mitral valve prolapse
1006. Total anomalous pulmonary venous return
1007. Tricuspid atresia

a) Well-developed, well-nourished child
b) Sudden death
c) "Snowman sign" (figure eight)
d) Scoliosis
e) ECG reveals characteristic left axis deviation

**Match the following antituberculous drugs and their toxicities (1008-1012)**:

1008. Ethambutol
1009. Streptomycin
1010. Rifampin
1011. INH
1012. Pyrazinamide

a) Elevated uric acid levels
b) Peripheral neuritis
c) Body fluid turns orange
d) Vestibular damage
e) Optic neuritis

## ANSWERS

| No. | | **Correct Answer** |
|---|---|---|
| 1. | a) | Right upper lobe (63% of cases) |
| 2. | b) | VSD |
| 3. | e) | Pneumococcal sepsis does **not** cause spherocytosis. However, clostridial septicemia with exotoxemia can cause spherocytosis. |
| 4. | e) | Sarcoma botryoides is a vaginal adenocarcinoma. |
| 5. | e) | In a patient with megacystis-megaureter syndrome, reimplantation of ureters into a urinary bladder corrects the reflux and resolves the condition. |
| 6 | e) | GnRH is a hypothalamic gonadotropin-releasing hormone. |
| 7. | e) | Toddler's diarrhea is common between 1 to 3 years of age. These healthy children eat carbohydrate-containing beverages and eat snacks throughout the day. Therefore, carbohydrate-containing beverages should be reduced, fat containing foods should be increased, and the fluid volume may be reduced. |
| 8. | e) | Deoxyribonuclease (DNase) B antigen |
| 9. | e) | Reassurance; the condition is self-limited and symptoms resolve within 2-3 months. Rarely, anticholinergic therapy is effective. This boy is diagnosed with pollakiuria or daytime frequency syndrome of childhood. This may be due to stress for an unknown reason or before the onset of kindergarten. |
| 10. | a) | Maternal age is **not** advanced in most cases. The Klinefelter syndrome is 47, XXY. |
| 11. | e) | Chromosome 4p involvement. This syndrome is caused by mitochondrial dysfunctions. |
| 12. | a) | The facial features are characteristic of myotonic muscular dystrophy. |
| 13. | d) | Intravenous corticosteroid therapy can improve a visual recovery in young adults but does not alter visual outcome. Oral corticosteroid should not be used because of increased recurrence rate of optic neuritis. Neuromyelitis optica (Devic disease) can cause bilateral optic neuritis. |
| 14. | e) | Addison disease is associated with alopecia areata. Alopecia areata is also associated with pernicious anemia, ulcerative colitis, vitiligo, collagen vascular diseases, and in some cases Down syndrome. |
| 15. | a) | NSAIDs (nonsteroidal anti-inflammatory drugs) and other anti-inflammatory drugs are **not** useful in Osgood-Schlatter disease. |
| 16. | e) | Education regarding prevention of poisoning should be discussed in well-child visits, even before a child is mobile. |
| 17. | e) | Amoxicillin-clavulanate is the preferred oral therapy for an infection in human and animal bite wounds. |
| 18. | e) | Ampicillin and sulbactum are the preferred intravenous therapies for an infection in animal and human bite wounds. Ticarcillin-clavulanate is an alternative therapy. |
| 19. | b) | 2-4 mL/min |
| 20. | c) | 8-20 mL/min |
| 21. | b) | 3-5 months of age |
| 22. | e) | Pneumothorax does **not** cause pulmonary hypoplasia. However, pneumothorax can occur in a patient with hypoplastic lungs resulting in pulmonary collapse. |
| 23. | d) | Ursodeoxycholic acid (15 mg/kg/day) increases a bile flow, interrupts an enterohepatic circulation of bile acids, and reduces a cholestatic jaundice. |
| 24. | e) | Achlorhydria-related bacterial overgrowth |
| 25. | d) | Oropharynx |
| 26. | a) | Tonsillectomy is indicated in a patient with seven or more tonsillar infections that were treated with antibiotics in the preceding year, five or more tonsillar infections that were treated in each of the preceding 2 years, or three or more tonsillar infections that were treated in each of the preceding 3 years. |
| 27. | e) | S. pneumoniae |
| 28. | b) | S. aureus |
| 29. | a) | Documented or suspected UTIs; answers (b), (c), (d), and (e) also cause gross hematuria. |
| 30 | a) | IgA nephropathy |
| 31. | b) | Furosemide causes hypercalcuria; nephrocalcinosis is also noted in medullary sponge kidney. |

32. e) Urinary bladder

33. e) Asymptomatic

34. b) $T_4$; when $T_4$ is low, TSH is measured.

35. e) Congenital adrenal hyperplasia; answers (a), (b), (c), and (d) also cause 46, XX intersex with virilization.

36. e) Inguinal canal (59% of cases)

37. c) Weakness of the gubernaculum; gubernaculum normally actively pulls the testes into the scrotum.

38. e) Idiopathic cause; answers (a), (b), (c), (d), and taxol also cause toxic neuropathies.

39. e) Prematurity and associated retinal immaturity at birth are major factors. Hyperoxia is also a major factor. Hyperoxic damage is mediated by free radicals.

40. e) Generalized constrictions and irregular narrowing of retinal arterioles are the first signs of hypertensive retinopathy. Answers (a), (b), (c), (d), and thickening of the retinal vessels (i.e., silver-or copper-wire appearance) also occur in hypertensive retinopathy.

41. a) S. aureus and Gram-negative organisms are the most common organisms in hospitalized neonates and very young infants.

42. e) S. pneumoniae

43. c) Low birthweight, maternal age, and season of birth are **not** risk factors for otitis media.

44. b) Bulbar conjunctivae; telangiectasias develop about 3 years of age. Answers (a), (c), (d), (e), upper anterior chest, antecubital fossa, and popliteal fossa are also sites of telangiectasias.

45. e) 0.5% malathione oris permethrin 1% cream rinse (Nix); answers (a), (b), (c), and (d) are alternative therapies. Malathione and lindane shampoo are contraindicated for use in neonates and infants.

46. c) Hypoplasia of quadriceps muscles is not a part of nail-patella syndrome. Some patients may develop nephritis.

47. c) Pink disease or acrodynia; it is due to an idiosyncratic hypersensitive reaction to **mercury** and occurs mostly in children. A child should be removed from a source of mercury exposure.

48. a) Ethanol is an antidote for both methanol and ethylene glycol poisoning.

49. c) Human bites

50. c) Parents can share a bed with an infant if they don't smoke cigarettes, drink alcohol, or take drugs. An intake of a drug or alcohol impairs parental arousal. Answers (e) is used for very unstable patients. However, these home monitoring devices do **not** decrease incidence of SIDS.

51. e) Peripheral pulmonic stenosis is usually present; sometimes TOF is present.

52. c) Vitamin K is used initially to prevent a hemorrhage. An etiology of cholestatic jaundice should be determined. Ursodeoxycholic acid is the preferred therapy in infants with TPN-induced cholestasis.

53. e) Nuts, particularly peanuts

54. d) CT-scan is not a screening tool but may be useful to make a diagnosis. Bronchoscopy is both diagnostic and therapeutic. A rigid bronchoscopy is used to remove foreign body. A flexible bronchoscopy is used in patients with noncopious bleeding.

55. d) The risk of recurrence is about 50% if one of the parents carries the 22q11 deletion.

56. a) Shprintzen (velocardiofacial) syndrome or DiGeorge syndrome has a 22q11 deletion. CATCH 22 is an acronym for both the syndromes.

57. a) Cardiac defects (conotruncal and branchial arch defects) are present.

58. b) Left-sided cardiac obstructive lesions (e.g., a combination of mitral valve, subaortic, aortic valve, and aortic arch) are called the Shone complex.

59. d) Three; deletion of one alpha-globin gene is not detectable hematologically; deletion of two alpha-globin genes results in alpha-thalassemia trait; deletion of four alpha-globin genes results in fetal hydrops.

60. e) Dermatitis; skin is always exposed in radiotherapy.

61. b) Cataracts

62. e) Neuroblastoma; it also causes diarrhea, skin nodules (infants), myoclonus-opsoclonus, and GI or GU obstructions.

63. d) Autosomal dominant

64. e) A dietary restriction of calcium is not recommended because calcium is required for growth and may not reduce the hypercalcuria.

65. a) Vigorous sexual intercourse results in rupture of one of the corporal bodies. Therefore, emergency surgical exploration and repair are indicated.

66. c) Bromocriptine or long-acting cabergoline is used in most patients. Answers (d) or (e) is a surgical procedure used in patients with prolactinoma.

67. c) 14 years

68. c) 12.5-13 years

69. b) 46, XX (70% of cases)

70. e) A child should be NPO.

71. c) 217.39 mL/hour. The maintenance (24 hours) fluid: 100 mL/kg (1st 10 kg) + 50 mL/kg (2nd 10 kg) + 25 mL/kg (remaining kg)= 1,000 + 500 + 500 = 2,000 mL. The fluid therapy per hour for the next 23 hours is:

$$\frac{85 \text{ mL/kg} + \text{maintenance} - \text{bolus}}{23 \text{ hours}}$$

$$= \frac{(85 \times 40) + 2{,}000 - 400}{23}$$

$$= \frac{3400 + 1{,}600}{23} = \frac{5{,}000}{23} = 217.39 \text{ mL/hour}$$

72. c) Ventriculoperitoneal shunt is required for hydrocephalus.

73. c) Patients with Turner syndrome do not usually have SNHL. However, patients with Hunter-Hurler syndrome can present with SNHL.

74. e) Pruritus

75. d) Foot planted with the lateral fibula moving towards the ground (i.e., inversion)

76. c) Hot compress is not used in Sever disease (calcaneal apophysitis). Application of ice and relative rest are other therapies.

77. a) Physostigmine should **not** be used because it can cause seizures and dysrhythmias. **Previously**, physostigmine was used as an antidote for TCA (tricyclic antidepressants) poisoning. Sodium bicarbonate is used to treat and prevent dysrhythmias. Serum alkaline pH (7.45-7.55) should be achieved. If sodium bicarbonate therapy fails to control dysrhythmias, lidocaine is used. Hypotension usually responds to intravenous fluid but norepinephrine drips may be required. ECMO (extra corporeal membrane oxygenation) is **not** useful because TCAs have a high degree of protein binding and large volume of distribution.

78. e) RSV immune globulin therapy is **not** indicated during an acute RSV bronchiolitis. Ribavirin is used in infants with chronic lung disease or congenital heart disease. Corticosteroids are widely used but they are not indicated for previously healthy infants with RSV bronchiolitis. Nebulized epinephrine may be more effective bronchodilators than that of beta-agonist. Sedatives should **not** be used. An infant may prefer sitting with head and chest elevated (30-degree-angle) and neck extended.

79. e) Mesenteric arteritis can occur in patients with **postcoarctectomy syndrome.** A patient may develop bowel necrosis and small bowel obstruction. A patient improves with antihypertensive medication (e.g., nitroprusside, esmolol, captopril). A surgical exploration of the abdomen is rarely indicated.

80. c) Arteriovenous fistulas. In a patient with high-output cardiac failure, cardiac output is more than normal and myocardial abnormalities are absent.

81. b) Hypotension does not occur. However, a recombinant human erythropoietin can cause hypertension.

82. e) Torsion of a left appendix testis appears with a ‘blue dot sign’ and 3-5 mm mass on upper pole of a testis.

83. e) Apthous ulcers in vulva can be treated with a topical corticosteroid and if necessary, a topical anesthetic is used.

84. b) In patients with McCune-Albright syndrome, x-ray reveals a fibrous dysplasia of bones and thickening of orbital bones.

85. e) Candidiasis occurs first, hypoparathyroidism (usually after 3 years of age), occurs second, and then, Addison disease (usually after 6 years of age).

86. a) About 12-20% of energy should come from proteins. High-protein intake can cause diabetic nephropathy. About 6-8% of energy should come from polyunsaturated fats. A ratio of polyunsaturated and saturated fats is increased to 1.2 : 1.0 (usual ratio is 0.3 : 1.0). A daily cholesterol intake is about 300 mg. An excessive use of salt should be avoided.

87. e) Hydrocephalus (90% of cases); answers (a), (b), (c), and (d) are also associated abnormalities.

88. a) Acetaminophen or ibuprofen. Chlorpromazine is used in patients with severe, intractable migraine attacks (i.e., status migrainosus) that are unresponsive to analgesics, antiemetics (e.g., dimenhydrate) and ergotamine preparations. Sumatriptan is **not** licensed to use before 18 years of age. However, sumatriptan may be effective in adolescents.

89. e) Sural nerve biopsy is diagnostic. Motor and sensory nerve conduction velocities are reduced. EMG and muscle biopsy are **not** required to make the diagnosis. Serum creatine kinase levels are normal. CSF proteins may be elevated but absence of cells.

90. c) Otitis media

91. e) Marfan syndrome patients with progressive mitral valve prolapse appear with arrythmias, endocarditis, cardiac failure, or thromboemboli.

92. a) Aortic root dilatation

93. e) A dimple that has increased distance from the anus (more than 2.5 cm) or associated with hemangioma increases the possibility of spinal dysraphism.

94. a) Topical antibiotic therapy is **not** necessary in a patient with staphylococcal scalded skin syndrome (Ritter disease). Clindamycin may be added with nafcillin to inhibit the production of bacterial proteins (toxins).

95. e) Deferoxamine is the chelating agent for iron poisoning. Iron is radiopaque.

96. c) Neuroblastoma

97. d) 9-24 months of age

98. b) 4-7 months of age

99. e) After 8 weeks (between 8-12 weeks) of age

100. d) 5 weeks of age

101. e) Recombinant human DNase therapy reduces viscosity of purulent bronchial debris and resolves atelactasis. This medicine is used in a nebulized form for nonintubated patients. This medicine is administered through the endotracheal tube for intubated patients. This medicine is recommended for patients with persistent atelactasis and cystic fibrosis.

102. a) An objective of mechanical ventilation is **not** to normalize arterial blood gas tension but to maintain adequate gas exchange (i.e., some degree of hypoxia, $O_2$ saturation 85-90%; moderate hypercarbia, $PCO_2$ 60-80 mm Hg are acceptable if the patient's condition is stable).

103. d) Haemophilus influenzae and Streptococcus pneumoniae may be cultured from throat but their role in causing pharyngitis is not clear. Viruses are the most common cause of pharyngitis. However, group A-beta-hemolytic Streptococcus (GABHS) is the most common bacterial cause of pharyngitis.

104. a) SPE-A is strongly associated with scarlet fever; SPE-B and SPE-C are also associated with scarlet fever.

105. b) Autosomal dominant; Romano-Ward syndrome is a common long Q-T syndrome but some cases are autosomal recessive.

106. c) Cardiac

107. c) Pacifier (dummy) use significantly reduces the risk of SIDS in infants when used routinely and during sleep. The mechanism is unknown. It may be due to a direct effect of pacifier or associated infant or parental behaviors. Breast feeding is recommended for many advantages but is not recommended to reduce the SIDS. Answers (b), (d), and (e) can increase a risk of SIDS.

108. c) 2-4 months of age.

109. c) "Steeple sign" represents typical subglottic narrowing that is present in a patient with croup. This sign may be absent in croup or may be present in a normal child or a patient with subglottic stenosis.

110. b) Epiglottitis

111. a) A stool's pH should be more than 6 in a patient with secretory diarrhea.

112. d) Stool volume is less than 200 mL/day in a patient with osmotic diarrhea.

113. e) Testicular atrophy is noted up to 30% of patients with an incarcerated inguinal hernia.

114. c) In preterm infants, the inguinal hernia should be repaired before discharge home from the nursery (i.e., between 1800-2000 grams).

115. a) The chromosome 15q is involved in patients with Aagenaes syndrome.

116. d) Byler disease does **not** have bile duct paucities and extrahepatic features unlike Alagille syndrome. Byler disease is a severe form of progressive intrahepatic cholestasis. Cirrhosis develops gradually. Byler disease causes rickets.

117. d) Sore (or scratchy) throat

118. e) Symptomatic therapy is indicated for patients with a common cold. Please remember, a change in color and consistency of the nasal secretions does **not** indicate a sinusitis or bacterial infection.

119. a) Rhinovirus; the presence of polymorphonuclear leukocytes does **not** mean a bacterial superinfection.

120. e) Allergic rhinitis

121. e) Valproic acid is the preferred therapy for patients with Landau-Kleffner syndrome. This syndrome should be suspected when sleep EEG is also normal. PET scan may reveal either unilateral or bilateral hypometabolism and hypermetabolism in LK syndrome. Other treatment in LKS includes speech therapy and a course of prednisone. Methylphenidate is used in patients with severe hyperactivity and inattention.

122. c) Subpial transection is indicated in LK syndrome when medical management fails.
123. e) ABR should be performed if a child failed OAEs testing. OAEs are absent if a hearing loss is more than 30-40 dB.
124. b) Paranasal sinusitis is the most common cause of orbital cellulitis in children. Answers (a), (c), (d), and (e) also can cause orbital cellulitis.
125. d) Tuberous sclerosis
126. b) Preceding 2-3 months
127. e) Thalassemia and other conditions have elevated fetal hemoglobin levels that falsely reduce the $Hb_{A1C}$ values.
128. d) Sickle cell disease
129. a) Normal (less than 6%) $HbA_{1C}$; a good control (6-8.5%); a fair control (9-10%); a poor control (11% and above).
130. d) Rhabdomyomas are present at the apex of left ventricle. Rhabdomyomas can cause arrythmia and congestive cardiac failure.
131. c) Hamartomas or polycystic kidney disease can cause pain, hematuria, and in some cases, renal failure.
132. b) Angiomyolipomas can produce cystic or fibrous pulmonary changes resulting in spontaneous pneumothorax.
133. e) Subarachnoid hemorrhages (traumatic or nontraumatic)
134. e) Purtscher retinopathy; Purtscher-like fundus is also noted in acute pancreatitis, SLE, and childbirth.
135. d) Elevated serum alkaline phosphatase activities are noted first; serum PTH levels is usually normal; answers (a), (b), (c), and (d) are also noted in familial hypophosphatemia. Increased urinary excretion of phosphate is due to a defect in renal tubular phosphate reabsorption probably secondary to failure of PHEX (phosphate-regulating gene with homologies to endopeptidases on the X chromosome) to cleave and decrease F6F23 action.
136. e) Bowing of lower extremities are smooth; answers (a), (b), (c), and (d) are noted in patients with calcium-deficient ricket. Familial hypophosphatemia (a pure phosphate-deficient ricket) also manifests with wadding gait, coxa vara, genu varum, genu valgum, and short stature.
137. c) Erythromycin. Tonsillectomy is curative therapy.
138. c) CT scan of an affected area or needle aspiration and culture can make the diagnosis of peritonsillar abscess.
139. e) A third-generation cephalosporin and ampicillin-sulbactum or clindamycin; surgical drainage is indicated in a patient with respiratory distress or failure to improve with antibiotic therapy.
140. e) Surgical drainage and a third-generation cephalosporin and clindamycin or ampicillin-sulbactum
141. d) ECG can reveal long Q-T syndrome.
142. d) Long Q-T syndrome; a heart-rate corrected Q-T interval of more than 0.47 second is highly indicative of long Q-T syndrome and more than 0.44 second is suggestive of long Q-T syndrome.
143. e) A patient with myxoma appears with fainting spells and have a positional character of murmur. Myxomas should be removed completely.
144. b) Left atrium (75% of cases); these smooth, pedunculated masses arise from an interatrial septum and protrude into the left atrium.
145. d) Overhydration; however, dehydration causes stress ulcers.
146. e) CT scan results are more sensitive and specific than that of ultrasonography.
147. a) Intravenous morphine should be used in patients with acute appendicitis to control the abdominal pain even before the diagnosis is confirmed. Morphine therapy does not delay the diagnosis.
148. a) PFT **rarely** makes a diagnosis. PFT can detect a functional impairment in patients with a normal physical examination but minor complaint. PFT is useful in determining responses of a bronchodilator in patients with an obstructive lung disease.
149. e) A deletion of a single **phenylalanine** residue at amino acid 508.
150. e) Unknown
151. b) Trisomy 18 (90% of cases); trisomy 21 (50% of cases); Turner syndrome (40% of cases)
152. e) Transposition of great vessels and left-sided obstructive lesions (e.g., aortic stenosis, hypoplastic left heart syndrome) are more common in boys than in girls.
153. d) Left upper lobe
154. a) Measure blood pressures in both lower extremities. In a normal person, systolic blood pressure in legs is 10-20 mm Hg higher than in arms. In patients with a coarctation of the aorta, blood pressures in lower extremities are lower than in upper extremities.
155. e) Breast bud is the first sign of puberty in girls.

156. d) Enlarged testes (more than 3 cm in volume or 2.5 cm in longest diameter) and thinning of the scrotum are the first signs of puberty in boys.
157. d) In females, pubic hair appears 6-12 months after appearance of breast buds.
158. c) At least one sign of puberty is present in approximately 95% of cases by 12 years of age.
159. a) Temperament problems can occur due to overtreatment with L-thyroxine. Craniosynostosis is a common problem. In older children (8-13 years), pseudotumor cerebri rarely occurs within the first 4 months of treatment.
160. a) Duration of inspiration is reduced. Respiratory rate is increased. Inspiratory muscles are accessory muscles. Retractions are present.
161. a) Duration of inspiration is prolonged. Inspiratory muscles are accessory muscles. Retractions are present. Amplitude of respiratory movements are normal or decreased.
162. a) Duration of inspiration is unchanged. Both inspiratory and expiratory (abdominal) muscles are accessory muscles. Retractions are present. Amplitude of respiratory movements are either normal or reduced.
163. e) Positive posteroanterior and lateral soft tissue x-ray of the neck (92% of cases); answer (d) is present in 90% of cases; answer (b) is present in 60% of cases; answer (c) is present in 58% of cases; answer (a) is present in 50% of cases.
164. e) Vascular ring causes brassy cough. Brassy cough is also noted in patients with tracheitis or habit cough. Brassy cough and stridor are noted in patients with a laryngeal obstruction or pertussis.
165. e) Chlamydia pneumonitis causes staccato cough.
166. d) Habit cough disappears during sleep.
167. e) Cutaneous lesions are present in 50% of cases.
168. d) Aortic insufficiency (50-90% of cases) is due to a prolapse of aortic valve into a defect.
169. b) Chromosome 12
170. e) Asymptomatic
171. e) Mitral insufficiency
172. e) Metronidazole does not cause folic acid deficiency. However, primidone causes folic acid deficiency resulting in megaloblastic anemia.
173. b) Wilson disease causes hemolytic anemia secondary to the toxic effects of free copper on RBC membranes.
174. e) Osteosarcoma
175. b) Ewing sarcoma
176. e) Streptococcus pneumoniae; gram-negative bacteria (e.g., E. coli) also causes peritonitis.
177. a) Retinoblastoma is **not** present; Lowe syndrome also appears with cataract, blindness, tantrum, stubbornness, obsession, and repetitive behavior.
178. b) Teratoma appears with calcification in plain abdominal x-ray.
179. a) Dysgerminoma
180. d) Surgical excision is usually followed by chemotherapy.
181. d) Amenorrhea or oligomenorrhea
182. e) Menarche is usually delayed about 3 years in ballet dancers. Therefore, a follow-up visit after 6 months is recommended.
183. e) Idiopathic is the most common cause of gonadotropin-dependent (true) precocious puberty.
184. e) Medicational precocity is due to a rapid absorption of testosterone gel that is widely used for the treatment of male hypogonadism.
185. e) An increased risk of premature adrenarche and metabolic syndrome is noted in SGA. This is due to an increased insulin resistance and reduced beta-cell reserve. Insulin is a growth factor for a fetus.
186. d) Premature pubarche (adrenarche) means the appearance of sexual hair before 8 years of age in girls and before 9 years of age in boys without other evidence of maturation. They are slightly advanced in height and osseous maturation.
187. c) Lipohypertrophy or subcutaneous scar formation occurs due to repeated subcutaneous injections at the same site. Lipohypertrophy causes poor absorption of insulin resulting in hyperglycemia.
188. e) Opthalmologist should examine a child with **type 1** diabetes mellitus within 3-5 years after the onset of diabetes but not before 10 years of age.
189. a) Opthalmologist should examine a child with **type 2** diabetes mellitus shortly after the diagnosis is established, regardless of symptoms.

190. b) Opthalmologist should examine children with type 1 or type 2 diabetes mellitus as soon as possible if they have visual symptoms.

191. d) Brainstem dysfunction

192. c) Phenobarbital

193. a) Brainstem injury at a level of superior colliculi produces decerebrate rigidity (i.e., marked extension of both upper and lower extremities).

194. e) 5-10 beats of symmetric clonus are normal; a sustained or asymmetric clonus is abnormal.

195. e) Parachutte reflex persists throughout life.

196. e) Make sure that a child has a seizure disorder and not a condition that mimics seizures (e.g., tics, breath holding, benign peroxysmal vertigo, cough syncope, familial choreoathetosis, pseudoseizures, night terror, narcolepsy, rage attack, benign myoclonus of infancy, and hereditary chin trembling).

197. e) Hexosaminidase A

198. e) Adrenoleukodystrophy is an X-linked recessive disorder.

199. a) Renal ultrasonography should be performed to rule out Wilms tumor. This screening test should be performed every 3 to 6 months until 5 years of age. Wilms tumor usually appears before 3 years of age.

200. d) Partial deletion of a short arm of chromosome 11

201. b) 6 months of age

202. b) 6 months of age

203. b) 15 months of age

204. c) 18 months of age

205. c) 17 months of age

206. a) NBAS is a poor predictor of future developments. NBAS also estimates a state organization and self-regulatory ability from birth up to 2 months of age.

207. b) Conversion disorder is the diagnosis for this patient. A sudden onset of symptoms, normal opthalmologic examination, and family history of similar illness are characteristics of a conversion disorder.

208. e) Reassurance; the boy's mental age is 4 years. Enuresis is normal until the mental age of 5 years. The diagnosis is made when voiding occurs twice a week for at least 3 consecutive months or a child is distressed due to voiding.

209. a) Arrythmias; other side effects of imipramine are postural hypotension, dry mouth, urinary retention, drowsiness, confusion, constipation, seizures, and elevated liver enzymes.

210. d) 9 hours per night

211. a) A mother is usually less concerned about the severity of a child's condition.

212. c) Sepsis (50% of cases); pneumonia (30% of cases) and meningitis (15% of cases)

213. b) Bacteremia (45-60% of cases); meningitis (25-35% of cases)

214. d) Type III

215. e) Type IV is less common; type V is more common.

216. c) Gonorrhea

217. d) Urethra

218. c) Cervix

219. a) Vulva-vagina

220. e) Ceftriaxone (50 mg/kg in a single dose intramuscularly, maximum 125 mg); cefotaxime (100 mg/kg in a single dose intramuscularly) is an alternative therapy. Cefotaxime is recommended in infants with jaundice.

221. a) Human herpes virus type 2 rarely produce symptoms similar to those of gonorrhea.

222. e) Pseudomonas aeruginosa

223. d) Malassezia furfur

224. a) Histoplasmosis (Histoplasma capsulatum) infections are common in areas that are heavily contaminated with bird droppings or decayed wood.

225. b) Herpes gladiatorsum is an HSV infection of a superficial abrasion. This lesion is also common **in wrestlers.** Herpetic whitlow is an HSV infection after minor trauma about the nails resulting in an extremely painful, deep-seated and vesicular spreading lesions.

226. d) During delivery

227. c) Negri body is a cytoplasmic inclusion noted in neurons. It consists of clumped viral nucleocapsid.
228. d) Antimalarial therapy
229. b) Oral candidiasis
230. e) S. pneumoniae
231. b) Cerebral atrophy (85% of cases)
232. e) Direct HIV-infection of the intestine
233. e) Nephrotic syndrome is characterized by edema, hypoalbuminemia, proteinuria, azotemia, and normal blood pressure.
234. e) Adenovirus
235. e) Asymptomatic; a rotavirus can cause NEC. The common clinical manifestations are fever, vomiting, and watery diarrhea.
236. a) Lesions do not become malignant. Human papillomavirus causes laryngeal papillomatosis.
237. b) Human papillomavirus
238. e) Latent infection is diagnosed by the detection of HPV DNA without clinical manifestations.
239. e) Increase amount of fluid or sugar in formula.
240. b) 1 year of age
241. b) 6 months of age
242. c) 8–9 months of age
243. b) 24 months of age
244. c) 1,600 kcal/day
245. b) 2,200 kcal/day
246. c) 2,800 kcal/day
247. c) Vitamin D toxicity can cause calcification of soft tissues (e.g., heart, kidneys, stomach, bronchi, and blood vessels).
248. e) Vitamin A toxicity
249. c) 4-6 months of age despite the fact that human milk iron is well absorbed.
250. d) Lactoferrin inhibits the synthesis of E. coli in the intestine. The lower pH of the stool of breast-fed infant decreases E. coli and increases lactobacilli and bifidobacteria.
251. c) 24 hours
252. d) 30 days
253. d) 24 hours of age
254. d) 1/12 (i.e., 8.3%)
255. e) Omphaloceles are associated with Beckwith-Wiedemann syndrome (**not** Down syndrome).
256. e) Erection of penis is commonly noted and has no significance.
257. c) Turner syndrome
258. e) Unknown; lesions and follicles disappear within 2-4 days.
259. b) Immediate opthalmologic consultation is indicated in patients with leukokoria (white pupillary reflex)
260. a) Infantile glaucoma appears with corneal edema, corneal enlargement, ocular enlargement, conjunctival redness, and visual impairment. The classic triad is tearing, photophobia, and blepharospasm. Leukokoria is also noted in patients with persistent hyperplastic primary vitreous.
261. c) Bronchoalveolar
262. a) Vomiting or nasogastric losses usually cause metabolic alkalosis.
263. c) Home
264. b) Firearms
265. c) Drugs
266. e) Handguns are the most commonly used firearms in homicides. Homicides are the most common cause of death among nonwhite teenagers.
267. e) Infections occur later and do not occur immediately. Other immediate complications of central venous catheters are air embolism, bleeding, apnea, airway obstruction, over sedation, shearing of vessels, or intravascular loss of guidewire.
268. d) Cardiac tamponade is a life-threatening complication. This is most likely due to a intra-atrial catheter.

269. c) 18 mm. The formula is:

$$\text{Uncuffed ETT size (mm)} = 16 + \frac{\text{Age in years}}{4}$$

$$= 16 + \frac{8}{4} = 18 \text{ mm}$$

270. d) All of the findings are characteristic of an early septic shock.

A patient with a **hypovolemic shock** has an increased SVR, decreased CO, WP, and CVP, normal or decreased MAP.

A patient with an **obstructive shock** has an increased SVR, WP, and CVP, decreased CO, and normal or decreased MAP.

A patient with **distributive shock** has an increased CO, decreased SVR, and normal or decreased MAP, WP, and CVP.

A patient with a **late septic shock has** an increased WP, decreased CO, SVR, and MAP, and normal or increased CVP.

A patient with a **systolic cardiogenic shock** has an increased SVR, WP, and CVP, decreased CO, and normal or decreased MAP.

A patient with a **diastolic cardiogenic shock** has an increased SVR, WP, and CVP, and normal CO and MAP.

A patient with an **early septic shock** has a normal, decreased, or increased MAP.

Please remember, WP, CVP, and pulmonary artery diastolic pressures are the same.

271. c) Cardiac output (CO) is increased in a distributive shock and early septic shock. Cardiac output is normal in a diastolic cardiogenic shock.

272. c) SRV is decreased in an early septic shock, late septic shock, and distributive shock.

273. a) CVP is decreased in an early septic shock and hypovolemic shock. CVP is normal or decreased in a distributive shock. CVP is increased or normal in a late septic shock.

274. a) Late septic shock. MAP is either normal or decreased in hypovolemic shock, cardiogenic (systolic, diastolic) shock, obstructive shock, and distributive shock. MAP is either normal, decreased, or increased in an early septic shock.

275. a) Infectious pneumonia and sepsis are the most common causes of ARDS. Other risk factors are shock, multiple transfusions, trauma, pulmonary contusion, near-drowning, drug overdose, reperfusion injury after lung transplantation, and acute pancreatitis.

276. b) 1-4 years of age (37% of cases); next group is 15-19 years of age (29% of cases)

277. b) 7-15 months of age (86% of cases)

278. d) Inadequate supervision by parents; they overestimated their child's abilities or coordination.

279. a) Bathtub

280. e) Swimming poll

281. a) Freshwater

282. a) Most submersion events occur when there is a brief lack of supervision (i.e., less than 5 minutes); up to 80% of children are hospitalized for at least 24 hours.

283. d) An endotracheal tube can be maintained for months without tracheostomy. If necessary, a tracheostomy should be performed electively and delayed until burns at and near the site of tracheostomy have healed. Inhaled corticosteroid therapy may be useful. A patient with severe carbon monoxide poisoning needs hyperbaric oxygen therapy. A high-frequency ventilation is indicated when $PO_2$ below 90% when on $Fio_2$ between 90-100% and PEEP of at least 12.5 cm in a conventation ventilator therapy.

284. e) Redness and blisters on the penis can occur. EMLA is a topical eutectic mixture of lidocaine and prilocaine.

285. a) FISH cannot be used as a screening tool. FISH is used to answer specific questions. FISH can identify specific DNA sequences in different recognizable diseases. FISH cannot provide information regarding the physical state of DNA or chromosome segment.

286. c) Phenotypically normal family members do **not** transmit the disease to their children. Autosomal dominant inheritance has a male-to male (i.e., father to son) transmission that is absent in X-linked disorders because father gives only Y-chromosome to his son.

287. b) The patients with Klinefelter syndrome are relatively tall and have delayed secondary sexual development.

288. a) Autosomal recessive; the patients with this syndrome have a reduced number of melanosomes. These melanosomes are large in size (macromelanosomes).

289. a) MSUD (Maple Syrup Urine Disease)

290. d) Beta-hexosaminidase A isozyme

291. e) Beta-hexosaminidase A and B isozymes
292. e) NEC is **not** a major cause of mortality in full term infants. Other major causes are trauma and infections.
293. d) A third fontanel is present in Down syndrome (trisomy 21) and preterm infants.
294. a) Achondroplasia causes a large anterior fontanel.
295. e) Klinefelter syndrome has a normal anterior fontanel.
296. b) Head compression
297. e) Cord compression
298. a) Hypoxemia, maternal hypotension, and excessive uterine activities cause late decelerations. A fetal hypoxemia occurs repeatedly due to uterine contractions.
299. e) Prednisone
300. a) Penicillamine
301. b) Chorionic villus sampling
302. b) By 35 weeks of gestational age, L:S ratio is 2:1 that indicates lung maturity.
303. e) Nd:YAG laser ablation of the anastomosis or cord occlusion in utero can be used to treat cardiac failure in the surviving twin.
304. e) In Erb-Duchenne paralysis, the injury occurs in the 5th and 6th cervical nerves resulting in adduction and internal rotation of the arm with pronation of the forearm.
305. b) **Hydrocephalus is absent;** congenital rubella syndrome also includes microcephaly and blindness.
306. e) No organism is usually identified; rotavirus can cause NEC.
307. e) Alcohol inhibits the transfer of zinc and essential amino acids to the fetus. Both are necessary for protein synthesis resulting in IUGR (Intra Uterine Growth Retardation) of the fetus.
308. e) Noncystic hyperplasia
309. a) Hyperactive behavior is noted in patients with FAS.
310. d) Prader-Willi syndrome (50% have a deletion of chromosome 15). Homologs of Drosphila developmental control genes also cause Pallister-Hall syndrome, postaxial polydactyle, and holoprosencephaly.
311. c) S. epidermidis (48% of cases)
312. e) Most suicidal attempts by adolescents are not successful; they also have an increased risk of behavioral disturbances and impaired social skills.
313. e) Referring to a psychiatrist is important in the assessment of every teenager who attempts suicide. The psychiatric evaluation can be done as an outpatient referral or hospitalization. **Please remember,** a suicidal ideation alone is **not** necessarily a risk factor for suicidal behavior. The risk is very serious when there is a specific plan.
314. a) A hospitalization cannot prevent repeated attempts and ultimate completion of a suicide when there are three most serious risk factors (e.g., substance abuse, mood disorder, and prior suicide attempt).
315. d) Alcohol; the use of alcohol is followed by cigarettes, marijuana, MDMA, and anabolic steroids in an order of decreasing numbers. However, the use of MDMA (Ecstasy) and anabolic steroids are increasing and alcohol, cigarettes, and marijuana are decreasing.
316. e) Phencyclidine (angel dust, sternyl, 'hog', 'peace pill', 'sheets') overdose can cause coma without a respiratory depression **unlike** opiates. PCP overdose can also causes hypertension, hypotension, psychosis, hypothermia, hyperreflexia, muscle rigidity, and death. PCP overdose patients do **not** respond to naloxone.
317. d) Acidification of the urine can enhance the exertion of PCP. The patient should be placed in a darkened, quiet room on a floor pad to avoid injuries.
318. c) Cocaine use needs only supportive care.
319. a) Methadone is the preferred therapy for detoxification of opiates. This boy has symptoms and signs of opiate withdrawal or the abstinence syndrome. A short course of diazepam is useful for the treatment of heroin detoxification. **The earliest sign of opiate withdrawal is yawning.**
320. c) Intravenous naloxone is used in patients with opiate overdose syndrome. Adequate ventilation and oxygenation should be maintained.
321. e) MDMA (methylenedioxymethamphetamine) or 'X' or Ecstasy is a hallucinogen. This drug is popular at 'raves', all night dance parties, and is also known as 'club drugs'.
322. e) Reassurance because the condition is benign.
323. b) A fibroadenoma does not change in size during a menstrual cycle unlike a cyst.

324. a) S. aureus
325. c) Fat; a minimal fatness of 17% of body weight is needed for the onset of menstruation and minimal fatness of 22% of body weight is needed for maintenance of regular ovulatory cycles.
326. e) Phenytoin does not cause gynecomastia.
327. b) Cervical cancer can develop in the future in a girl with HPV infection.
328. c) Bone marrow transplantation is a preferred therapy for patients with SCID (severe combined immunodeficiency) syndrome. Gene therapy is useful in X-linked SCID and hopefully will be useful in the future.
329. e) Adenosine deaminase (ADA) deficiency appears with a very low absolute lymphocyte count (less than 500/mm$^3$) and skeletal abnormalities. Bone marrow transplantation is a preferred therapy.
330. b) S. aureus
331. d) S. aureus
332. a) S. aureus is the most common organism; answers (b), (c), (d), (e), and aspergillus also cause infection in patients with CGD.
333. e) Shwachman–Diamond syndrome
334. e) Epicutaneous skin tests
335. a) Sleep well without disturbance due to asthma
336. a) Asthma
337. a) All young children who experience wheezing, **only a minority** of them will develop asthma in later childhood.
338. d) Spirometry measures airflow and lung volumes during a forced expiration.
339. a) Histone
340. a) Sm
341. e) **Group A Streptococcus** infection is associated with erythema nodosum.
342. d) Ulcerative colitis causes erythema nodosum.
343. a) Antibodies to Sm antigen is found in SLE. Biopsy of lips or glands reveals foci of lymphocytic infiltrations. Sjogren syndrome is evaluated by an abnormal **Schirmer test** (i.e., abnormal tear production). This syndrome appears with xerophthalmia (dry eye, or keratoconjunctivitis sicca), xerostomia (dry mouth), and abnormal connective tissue disease features.
344. b) Lungs
345. b) A tissue biopsy demonstrates the characteristic noncaseating granulomatous lesions.
346. e) Myocarditis (50% of cases) manifests by tachycardia and decreased ventricular functions. Coronary artery aneurysms (25% of cases) develop in untreated patients during the second and third week of illness.
347. c) In acute stage of Kawasaki disease, the preferred therapy is a combination of intravenous immunoglobulin 2 grams/kg over 10-12 hours with aspirin 80-100 mg/kg/day (anti inflammatory dose) divided every 6 hours orally until 14th illness day.
348. b) Aspirin 3-5 mg/kg once daily (antithrombotic dose) until 6-8 weeks after the onset of illness.
349. e) Tissue plasminogen activator, streptokinase or urokinase should be given under supervision of a pediatric cardiologist. Abciximab may be useful in patients with a giant coronary aneurysms or possible thrombosis.
350. e) Aspirin (3-5 mg/kg) once daily orally with or without dipyridamole (4-6 mg/kg/day) divided two or three doses orally. Warfarin may be added in patients who have a high risk of thrombosis.
351. b) Repeat IVIG (2 grams/kg)
352. e) The use of corticosteroids is controversial. However, it is used when a patient does not respond to two doses of IVIG.
353. d) Influenza vaccine
354. b) MMR and varicella vaccines should be delayed for 11 months because presence of specific antiviral antibodies in IVIG may interfere with the immune responses to parental live-virus vaccines.
355. a) Churg-Strauss syndrome is usually not associated with a destructive upper airway disease.
356. e) Ileoileal, barium enema is both diagnostic and therapeutic
357. e) Biopsy of involved skin sites reveals leukocytoclastic angiitis. Renal biopsy may reveal IgA mesangial deposition and occasionally, IgM, fibrin, and C3. HSP is usually diagnosed clinically by a dependent edema, rash, arthritis, abdominal pain, and renal involvement.
358. e) S. aureus releases toxin resulting in tachycardia.
359. e) Amphotericin and removal of the catheter are indicated in catheter-related fungemia.

360. e) Vancomycin, repeat the blood culture, and keep the central line. If the blood culture remains positive after 72 hours of antibiotic therapy, or if the child is unstable, the central line should be removed. S. epidermidis is usually resistant to nafcillin and ampicillin. There is no need to remove the catheter immediately. "Antibiotic lock" or "dwell" therapy (i.e., inject a solution of high concentration of an antibiotic that remains in the catheter for up to 24 hours) may be useful.

361. e) In patients with a colonization of VA shunt, CSF obtained from a ventricular or lumbar puncture is **usually sterile** but the organism is isolated from a shunt reservoir. The signs of ventriculitis is usually absent and the CSF findings are mildly abnormal. Blood culture is usually positive in VA shunt colonization but negative in VP (ventriculoperitoneal) shunt colonization. Shunt nephritis is a hypocomplementemic glomerulonephritis due to antigen-antibody complex deposition in the glomeruli. The patient with a shunt nephritis appears with hypertension, microscopic hematuria, anemia, high BUN and creatinine levels.

362. b) Vancomycin and keep the shunt because there is no shunt infection. Meningitis does **not** mean a shunt infection.

363. e) An antibiotic (e.g., vancomycin or nafcillin) therapy and removal of the shunt are indicated in a patient with VP shunt and wound infection.

364. b) M type 52 is **not** nephritogenic. The M types (49, 55, 57, and 60) commonly associated with skin infections **rarely** cause pharyngitis, and the M types commonly associated with pharyngitis **rarely** cause skin infections.

365. d) M type 12 is nephritogenic.

366. a) S. aureus; **previously, the answer was** S. aureus for a bullous and group A Streptococcus for a nonbullous impetigo.

367. e) Erysipelas is characterized by a sharply defined and slightly elevated border. In cellulitis, the border is not sharply defined. In an insect bite, there is a bite mark in the center and surrounded by redness.

368. e) Group A Streptococcus

369. e) Culture obtained by needle aspirate of an affected area.

370. a) Linezolid; answer (e) drug is sensitive to E. faecium but inactive to E. faecalis.

371. e) C. jejuni; Mycoplasma pneumoniae infection also causes this G-B syndrome.

372. b) Two days after the onset of antibiotic therapy to prevent the spread of bubonic plague to pneumonic plague.

373. a) IM streptomycin is a preferred therapy for bubonic plague.

374. a) IV chloramphenicol (60-100 mg/kg/day divided every 6 hours); streptomycin has a poor penetration in CSF.

375. c) Chloramphenicol or tetracycline

376. d) A 7-day course of doxycycline or tetracycline is recommended. Doxycycline is a preferred therapy for children over 8 years of age.

377. e) Contacts of an **uncomplicated** bubonic plague do not require any treatment.

378. d) Clarithromycin, or azithromycin can erradicate 100% cases of Mycoplasma pneumoniae infections. Erythromycin or tetracycline is also an effective therapy.

379. d) Stevens-Johnson syndrome is due to a Mycoplasma pneumoniae infection.

380. b) Coxsackievirus A16 is the most common organism in patients with a hand-foot-and-mouth disease. Enterovirus 70 infections cause acute hemorrhagic conjunctivitis.

381. e) Enterovirus 71 can cause a severe form of hand-foot-and-mouth disease (i.e., associated aseptic meningitis, encephalitis, and paralysis).

382. a) Enteroviruses (e.g., coxsackieviruses B2-B5, echoviruses 4,6,7,9,11,16, and 30, enteroviruses 70 and 71).

383. d) "Ampicillin rash" is a typical finding in patients with Epstein-Barr virus infection when ampicillin or amoxicillin is used.

384. e) Epstein-Barr virus infectious mononucleosis; Alice in Wonderland syndrome (metamorphopsia)means perceptual distortions of sizes, shapes, and spatial relationship.

385. e) Subcapsular splenic hemorrhage or splenic rupture occurs during the 2nd week of the illness but it is not common in children. Answers (a), (b), (c), (d) are also complications of EBV infectious mononucleosis.

386. e) Subcapsular hepatic hemorrhage does not occur.

387. a) Suicide and motor vehicle accidents are most common in children who are white and nonpoor.

388. e) Three-fold increase in weight and two-fold increase in length

389. c) 6-9 feedings/day

390. e) 80-90 mL/feeding

391. b) Two-thirds of 4-6 years old children except for milk

392. e) Mother should stop ingesting spices when there is a **strong correlation** between spices and diarrheal symptoms. A maternal ingestion of chocolate, condiments, cabbage, berrier, tomatoes, and onion can produce gastric distress and loose stools in a breast-fed infant.

393. c) In children, obesity is usually associated with tall stature, slightly advanced bone age, and somewhat early puberty.

394. d) Type 2 diabetes; the child has acanthosis nigricans which is associated with insulin resistance and a higher risk of developing type 2 diabetes.

395. c) Inspection only; if necessary BMI can be plotted on a BMI growth chart.

396. e) A serum electrolytes test is not indicated. A serum leptin level is useful to make the diagnosis of leptin deficiency or resistance. Hypothyroidism and hypercortisolemia can be ruled out. A study to test for sleep apnea may be necessary.

397. e) Hyperthyroidism is **not** a complication of obesity. Other complications of obesity are infertility, degenerative joint disease, anxiety, depression, cancer, and discrimination in social life.

398. a) Computer games and TV viewing should be decreased because energy expenditures are reduced in both conditions. Some children prefer to eat during watching TV shows.

399. d) Education and prevention; answers (b), (c), and (e) are effective as well.

400. d) Vitamin $B_6$ toxicity

401. c) Thanatophoric dysplasia; the cloverleaf skill deformity is known as kleeblattschadel. All the clinical manifestations of this child are characteristics of thanatophoric dysplasia.

402. a) This is a characteristic clinical manifestation of achondroplasia.

403. b) Autosomal dominant.

404. d) Chromosome 15 (15q21); abnormal biosynthesis of fibrillin-1 is located in chromosome 15.

405. e) Corneal opacity is absent in Marfan syndrome; ocular abnormalities are due to connective tissue defects.

406. e) 4 hours or more after ingestion; a level obtained before 4 hours cannot determine the severity of an overdose.

407. e) **Between 24-48 hours** after acetaminophen ingestion, all clinical symptoms (e.g., anorexia, nausea, vomiting, pallor, diaphoresis) that were present between ¼ hours to 24 hours resolve. The patient usually develops right upper quadrant pain, oliguria, elevated LFTs and PT. A plasma acetaminophen level indicates the severity of acute ingestion.

408. b) 11 beta-hydroxylase deficiency causes hypertension.

409. a) Adrenal medulla (90% of cases)

410. d) Chromosome 17q

411. b) Reduced left temporal lobes gray matter volumes. The volume is less reduced in patients who are treated with testosterone.

412. c) X-linked short arm ($X_p$)

413. e) Reassurance; spontaneous regression occur usually within a few months. The boy has a physiologic pubertal gynecomastia. Answer (a) has an antiestrogenic effect but has many side effects. Answers (b) and (c) are aromatase inhibitors. Surgery is rarely indicated.

414. a) Women who received valproate for epilepsy before 20 years of age can develop PCOS. They have elevated testosterone levels but normal LH levels. PCOS is also called Stein-Leventhal syndrome.

415. e) In reproductive years, this syndrome is the most common cause of anovulatory infertility.

416. c) XY pure gonadal dysgenesis (Swyer syndrome). Answer (a) appears with a slightly ambiguous genitalia. Answer (b) appears with nephropathy, ambiguous genitalia, and bilateral Wilms tumor. Answer (d) appears with Wilms tumor, aniridia, genitourinary malformation, and retardation. Answer (e) appears with anterior bowing of the femur and tibia, and malformation of other organs. About 75% of reported 46, XY patients have complete female external and internal genitals. All of the above conditions have a 46, XY intersex.

417. b) Pineal hyperplasia is a feature of this syndrome. This patient lives beyond 1 year of age.

418. e) IUGR is a feature of leprechaunism. Most patients die within 1st year of life.

419. d) Skull x-ray can make the diagnosis; bone scan is used in difficult cases. The diagnosis is scaphocephaly.

420. a) Increased intracranial pressure or hydrocephalus is absent in scaphocephaly. The patients have a normal neurological examination.

421. b) Seizure activities are associated with an elevation of the blood pressure.

422. e) Aicardi syndrome

423. a) Generalized myoclonic seizures

424. d) Drug withdrawal seizures in newborns myoclonic or frank clonic seizures. Drugs are methadone, heroin, barbiturates, and benzodiazepines. Therefore, urine toxicology test should be performed.

425. d) Smallpox; this boy has a characteristic presentation of smallpox. The synchronous nature of the rash with a centrifugal (away from center of a body) distribution can distinguish smallpox from chickenpox that rashes are nonsynchronous and centripetal (toward center of a body). The survivors of smallpox develop disfiguring and de-pigmented scars over the affected areas. Patients who are exposed to lewisite (blistering agent) experienced immediate pain, cutaneous vesicles, and injuries to eyes and airways.

426. e) Nonvenomous snakes have a rounded head and rounded pupil. Therefore, reassurance and local wound care are indicated because they have no fangs. Venomous snakes have a triangular-shaped head, elliptical pupil, and fangs (e.g., pit vipers, or Crotalidae). These are the most common poisonous snakes in USA.

427. e) Applying ice to the site of injury or using excision and suction is contraindicated because it causes more tissue damage.

428. e) Paralysis and respiratory failure are the most common complications. Antivenin is only effective if given before to the onset of symptoms but it cannot reverse the symptoms once started. The patient may remain asymptomatic for a few hours.

429. b) VSD (about 50% of cases)

430. e) Congenital absence of the pulmonary valve produces a syndrome that manifests with signs of an upper airway obstruction. Marked aneurysmal dilatation of the main and right or left pulmonary artery resulting in compression of the bronchi that causes wheezing and recurrent pneumonia. Cyanosis may be absent, mild, or moderate. This syndrome may be associated with TOF.

431. b) William syndrome has a deletion of elastin gene on chromosome 7q.

432. a) Balloon valvuloplasty

433. e) Subvalvular aortic stenosis may become apparent after a successful repair of other cardiac defects (e.g., VSD, PDA, or coarctation of aorta).

434. a) Konno procedure (i.e., obstruction of a left ventricular outflow tract can be relieved by borrowing space anteriorly from a right ventricular outflow tract).

435. d) Pulmonary atelactasis can occur in asthma, pneumonia, and trauma. Massive collapse of one or both lungs most commonly occurs after a surgery. The most common site of atelactasis is the right upper lobe.

436. c) Nausea is absent in hemoptysis.

437. d) Frothy blood is absent in hematemesis.

438. c) Right upper lobe abscess. This is a characteristic x-ray finding of a lung abscess.

439. c) Lung CT scan is better than a chest x-ray.

440. a) A secondary lung abscess is more common on the left side.

441. d) Single atrium is not present; other cardiac conditions are single ventricle, pulmonic stenosis, and pulmonary atresia.

442. e) Blalock-Taussig shunt or total repair is performed in patients with a tetralogy of Fallot. This patient has a high right ventricular pressure 40/6 mm Hg (normal 25/3 mm Hg), low pulmonary artery pressure 5 mm Hg (normal 25/10 mm Hg), reduced left ventricular saturation 80% (normal 94-100%), and reduced aortic saturation 80% (normal 94-100%).

443. b) Arterial switch (Jatene) operation is the preferred procedure for transposition of great vessels. However, Rashkind balloon atrial septostomy is the initial procedure of choice. This patient has a high right ventricular pressure 100/8 mm Hg (normal 25/3 mm/Hg), high pulmonary artery pressure 40/2 mm Hg (normal 25/10 mm Hg), decreased left ventricular pressure 40/2 mm Hg (normal 100/8 mm Hg).

444. a) Repair of VSD is indicated. This patient has an increased right ventricular pressure 35/5mm Hg (normal 25/3mm Hg), increased right ventricular saturation 80% (normal 74%), and increased pulmonary artery saturation 80% (normal 74%).

445. e) Correct hyponatremic dehydration.

446. d) Correct hypernatremia over 48 hours.

447. c) The patient should be admitted because the home-made formulas result in salt poisoning to this child.

448. a) Give excessive fluids, then DDAVP in a patient with diabetes insipidus.

449. d) Furosemide, hydrochlorthiazide, and bumetanide cause hypokalemia. Furosemide also causes metabolic alkalosis.

450. e) Nifedipine causes facial flushing and tachycardia.

451. a) Enalapril and diazoxide cause hypotension; enalaprilat causes transient hypotension; prazocin causes orthostatic hypotension.

452. a) Clonidine causes sedation, constipation, rebound withdrawal, and hypertension.

453. b) Vitamin $B_{12}$ deficiency can occur in breast-fed infants whose mothers are vegans or themselves have pernicious anemia.

454. a) Macrotytic anemia is present; Pearson's syndrome is a unique variant of congenital sideroblastic anemias that are microcytic.

455. c) 1.0;
Reticulocyte index = $\text{reticulocyte\%} \times \frac{\text{observed hematocrit}}{\text{normal hematocrit}} \times \frac{1}{\mu}$
($\mu$ is a maturation factor related to the severity of the anemia)

456. d) 3-4 ; a maximum of 6-8 corresponds to a maximal marrow response.

457. d) Hereditary spherocytosis is diagnosed by a positive family history, large number of spherocytes in peripheral blood smear, reticulocytosis, and splenomegaly.

458. e) Reassurance; the average heart rate in newborns ranges from 120 to 140 beats per minute and may increase up to 170+ beats per minute during crying.

459. e) Reassurance; the heart rate can drop to 70-90 beats per minute during sleep. When the baby is awake heart rate goes above 100-120 per minute.

460. e) Reassurance; the heart rate can normally drop up to 40 beats per minute in athletic adolescents.

461. e) A 16-years-old athlete's heart rate up to 40 beats per minute is normal.

462. d) Differential cyanosis is noted in coarctation of aorta, interrupted aortic arch, and persistent pulmonary hypertension (PPHN).

463. a) Transposition of great arteries

464. e) Prominent venous plexus in lips

465. e) Prominent venous plexus on the forehead.

466. d) Unwrapped and cold extremities (i.e., acrocyanosis)

467. a) S. epidermidis is common in the presence of an indwelling central venous catheter or prosthetic valve. For a native valve, the common organisms are viridans group streptococci (e.g., S. mutans, S. sanguis, S. mitis), S. aureus, group D Streptococcus (enterococcus) (S. bovis, S. faecalis).

468. a) S. aureus

469. a) Viridans group streptococci (e.g., S. mutans, S. sanguis, S. mitis)

470. a) Group D streptococcus (enterococcus)(e.g., S. bovis, S. faecalis)

471. e) Group D streptococcus (enterococcus) (e.g., S. bovis, S. faecalis)

472. b) Pseudomonas aeruginosa or Serratia marcescens

473. c) Staphylococcus epidermidis

474. d) Poor dental hygiene

475. e) Repair of a simple ASD or closure of PDA almost eliminates the risk of developing endocarditis. A surgical correction of a congenital heart disease can reduce but does not eliminate the risk of endocarditis except the two conditions mentioned above.

476. d) Tricuspid regurgitation (TR) is **not** a preoperative condition and does not produce infective endocarditis. TR is common in newborns with a perinatal asphyxia secondary to transient papillary muscles dysfunction. TR is a self-limiting condition. However, mitral valve prolapse, bicuspid aortic valves, PDA, ASD, and other anatomical cardiac defects, especially involving the left side of the heart can develop infective endocarditis.

477. d) The patients with congenital hypoplastic anemia (Diamond-Blackfan anemia) may appear clinically with short stature, craniofacial abnormalities, or defects in upper extremities (e.g., triphalangeal thumbs). Answer (c) should be ruled out by a PCR study. Answer (e) patients usually manifest after 6 months of age.

478. b) Fetal hemoglobin levels are elevated; folic acid and vitamin $B_{12}$ levels are normal; thrombocytosis or thrombocytopenia is noted; bone marrow chromosome studies are normal unlike in Fanconi anemia.

479. b) **Corticosteroid;** the patients who do not respond to corticosteroid therapy, **transfusions** at intervals of 1-2 months are indicated to maintain a normal growth and development, and a chelating agent (e.g., **deferoxamine,** deferiprone) is used to avoid iron overload; **stem cell transplantation** is indicated if above therapies fail.

480. d) Gliomas are common between 2-5 years of age. Medulloblastomas and primitive neuroectodermal tumors (PNET) are common in less than 1 year of age.

481. e) Non-Hodgkin lymphomas, gliomas, and acute lymphoid leukemias are more common between 2-5 years of age. Testicular and ovarian cancers are more common during puberty.

482. d) Osteosarcomas; a therapeutic radiation to the brain causes brain **cancers.** Ionizing radiation therapy can also cause ALL (acute lymphoid leukemia).

483. a) Non-Hodgkin lymphomas (2-5 years of age) and Hodgkin lymphomas (6-18 years of age) are associated with E-B virus infections.

484. a) Optic gliomas

485. a) Li-Fraumeni syndrome is associated with osteosarcomas and rhabdomyosarcomas. Langerhans cell histiocytosis is also associated with ALL.

486. a) Beckwith-Wiedemann syndrome is associated with Wilms tumor and hepatoblastomas.

487. d) Osteosarcoma

488. e) Urethrorrhagia (i.e., urethral bleeding without urine) is associated with dysuria and blood spots on underwear after voiding. Urethrorrhagia begins condition.

489. d) Posterior urethral valve presents with hydronephrosis, dilated-thickened urinary bladder, and dilated ureters. The most common cause of gross hematuria is UTI; other causes are postinfectious glomerulonephritis, thin glomerular basement membrane disease, trauma, tumor, urolithiasis, hypercalcuria, meatal stenosis, perineal irritation, and coagulopathy.

490. e) Sacrococcygeal

491. e) Polyostotic disease, precocious puberty, and skin pigmentation.

492. c) Osteoid osteomas

493. e) A night pain that awakens the child and is not relieved by aspirin usually suggest a malignancy.

494. e) 5 years of age and once during the second decade of life.

495. e) A false-positive blood in the urine can occur during menstruation, alkaline urine with a pH more than 9, or contamination with an oxidizing agent used to clean the perinium before obtaining the specimen.

496. e) Normal children between 4-12 years of age excrete more than 100,000 RBCs per 12 hour periods. This condition worsens with a fever or exercise.

497. a) Hyperthyroidism does **not** occur in patients with cystinosis. They usually have **hypothyroidism.**

498. b) Leukocyte cystine content is a diagnostic study; the presence of cystine crystals in the cornea is suggestive of cystinosis.

499. a) CRF patients respond to immunization suboptimally.

500. d) Rejection (50% of cases); any glomerulopathy can develop in the graft. However, focal segmental glomerulosclerosis is the most common.

501. c) Congenital renal disease (53% of cases) and obstructive processes are common in less than 5 years of age; glomerulopathies are common between 13-17 years old.

502. a) Latex allergy (about 50% of cases)

503. d) IgE-mediated latex allergy is due to a repeated exposure to latex allergen.

504. c) Latex allergy

505. e) Reassurance; a penile length normally should be at least 1.9 cm. The mean length of a newborn penis is 3.5+0.7 or 3.5-0.7 cm and 1.1+0.2 or 1.1-0.2 cm in diameter.

506. a) Hypothalamus fails to produce an adequate amount of gonadotropin-releasing hormone (e.g., Prader-Willi syndrome, Kallmann syndrome, and Lawrence-Moon-Biedl syndrome).

507. e) Assessment of **anterior** pituitary function and testicular function are indicated.

508. a) S. aureus, phage group II, type 71.

509. b) **Lichen sclerosus**; this is a characteric presentation. Sometimes, vesicles and bullae with hemorrhages may present over the vulva.

**Lichen planus** lesions are characterized by angular, violaceous, flat-topped papules and **mimic leukoplakia.**

**Lichen simplex chronicus** appears with **white, hypertrophic, edematous** lesions over the vulva due to persistent rubbing and scratching.

**Vulvar psoriasis** appears with **white scaly** patches, especially on the mons pubis.

**Atopic dermatitis** appears with erythematous, intense pruritus, papules, vesicles associated with **oozing and crusting.**

510. b) Sexual abuse; HPV types 16 and 18 are associated with malignant and premalignant lesions of the vulva. HPV types 6, 11, 16, and 18 cause anogenital lesions.

511. e) More than 35%

512. b) 7-22%; the risk is somewhat higher in Crohn disease than in ulcerative colitis.

513. a) Oral metronidazole is used for patients with 'pouchitis'. Loperamide is used to decrease the frequency of stool. Sulfasalazine is used as a first line of therapy in patients with a mild disease (UC).

514. e) Aseptic necrosis of the **head** of the femur, osteopenia, infection, and cosmetic effects

515. e) Aminosalicylate enemas are used especially to treat proctitis. Hydrocortisone enemas can also be used for patients with proctitis.

516. a) Rectum

517. e) A flexible sigmoidoscopy and biopsy can confirm the diagnosis. Colonoscopy can use to detect the extent of disease and to rule out Crohn colitis. A colonoscopy is contraindicated during fulminant colitis because of the risk of toxic megacolon or perforation. Barium enema should **not** be considered as a diagnostic study.

518. c) UC appears with diffuse lesions. The segmented lesions are noted in Crohn disease.

519. a) Terminal ileum; Crohn disease most commonly involves ileum and the colon (ileocolitis).

520. e) Noncaseating granulomas are also noted in sarcoidosis; this characteristic finding often is absent. Nonspecific inflammatory changes are commonly noted in patients with Crohn disease.

521. e) Growth failure with delayed bone maturation and delayed sexual development may occur 1 to 2 years **before** the other clinical manifestations.

522. c) Oral corticosteroids (e.g., prednisone, 1-2 mg/kg/day, maximum 40-60 mg)

523. e) Neuropathy with paresthesias can develop; metronidazole should be stopped.

524. a) Food-induced enterocolitis is a non-IgE mediated disorder. Other IgE-mediated disorders are angioedema, atopic dermatitis (eczema), rhinoconjunctivitis, systemic anaphylaxis. Gastrointestinal anaphylaxis manifests with nausea, vomiting, diarrhea, and/or cramping abdominal pain due to ingestion of an allergen (e.g., milk, soy, egg, peanut, fish, cereal).

525. b) Oropharyngeal itching or tingling and angioedema of the lips, tongue, palate, and throat are manifestations of oral allergy syndrome.

526. e) Reassurance; a palpable liver 2cm below the right costal margin is normal for children.

527. e) Reassurance; a palpable liver 3.5cm below the right costal margin is normal for newborns.

528. e) Riedel lobe(i.e., the lower edge of the right lobe of the liver extends downwards) is noted in some normal people.

529. b) 2-3 mg/dL

530. e) Over 5 mg/dL

531. e) Chronic liver disease

532. e) Normal; an elevated alkaline phosphatase level is noted in rapidly growing adolescents.

533. d) Increased echogenicity is noted in patients with fatty infiltration and mass lesions. 'Triangular cord sign' means triangular/tubular-shaped echogenic density at the bifurcation of the portal vein due to fibrous remnants at the porta hepatis.

534. a) Autosomal recessive

535. e) Kayser-Fleischer ring in the cornea occurs due to accumulation of copper.

536. c) Chromosome 13

537. d) Hepatic manifestations; after 20 years of age, neurologic manifestations predominate. Psychiatric disorder can occur.

538. d) Hepatoblastoma does **not** occur; other hepatic manifestations may include cryptogenic cirrhosis, ascites, edema, portal hypertension, varicel hemorrhage, or other side effects of hepatic malfunction (e.g., coagulation defect, amenorrhea, delayed puberty).

539. e) Neurologic; Kayser-Fleischer rings may be **absent** in younger patients with liver disease.

540. b) Fanconi syndrome

541. e) Disk batteries cause pain and local tissue destructions within a matter of hours.

542. e) Toxic shock syndrome most commonly occurs from nasal surgical packing.

543. e) Suctioning the secretions is indicated; the foreign body is usually located behind the secretions; often a topical decongestant and headlight are needed to remove the foreign body.

544. e) Trauma from delivery.

545. e) Immediate realignment by an ENT specialist

546. e) The arterial supply in sequestration comes from systemic arteries, especially from the aorta and venous drainage returns to the right atrium, especially through inferior vena cava.

547. e) Productive cough, sinusitis, and otitis media are present in almost all patients; about 50% of patients have Kartagener syndrome (i.e., situs inversus, otitis media, chronic sinusitis and airway disease leading to **bronchiectasis).** Primary ciliary dyskinesia is known as immotile cilia syndrome.

548. e) Unknown

549. e) Nasal (or bronchial) biopsy or scraping reveals quantitative documentation of missing dynein arms or random orientation of cilia under electron microscopic examination.
550. c) Obstructive lung disease
551. e) 350 mL/kg/minute
552. e) 3 months of life
553. c) 10-15 hours of life
554. b) 50 mm Hg
555. c) Mitral valve prolapse
556. b) TOF or VSD
557. c) Trisomy 21p is cat-eye syndrome. Deletion 5p is cat-cry syndrome (or cri du chat syndrome).
558. a) CMV infections
559. e) Alcohol and tobacco use cause hypertension.
560. e) 'ABO' hemolytic disease occurs in the first few days of life. Unrecognized pulmonary blood loss can also cause anemia that is unresponsive to iron therapy.
561. d) Osmotic fragility test
562. d) Splenectomy is contraindicated. Prednisone is used during acute hemolysis. Iron therapy may be necessary.
563. c) IVIG should be continued throughout the pregnancy. Baby should be delivered by cesarean section.
564. e) Presence of maternal alloantibodies directed against antigens present on fetal platelets that are shared with the father.
565. e) Lymphohematopoietic (44% of cases)
566. c) Renal ischemia causes hypertension in patients with Wilms tumor.
567. a) Cataracts does **not** have increased risk of Wilms tumor; the following conditions that have an increased risk of Wilms tumor are aniridia, von Willebrand disease, and neurofibromatosis (von Recklinghausen disease).
568. b) Autosomal recessive
569. c) Hypokalemia, elevated urinary magnesium levels, absence of recurrent dehydrations, PGE secretions are not increased, normal renin and aldosterone levels, and less prominent growth failure. In contrast, Bartter syndrome appears with growth failure and elevated urinary calcium levels.
570. c) Spastic diplegia. The boy has commando crawls rather than using the normal four-limed crawling movements.
571. b) About 33% cases of spastic hemiplegia have a seizure disorder that usually develops during the first two years of life.
572. c) Spastic diplegia; some patients of spastic quadriplegia have normal intelligence.
573. d) Periventricular leukomalacia, especially in the area where nerve fibers supplying the legs travel through the internal capsule. Answer (a) is noted in athetoid CP secondary to high bilirubin levels. Answer (b) can be noted in extrapyramidal (or athetoid) CP. Answer (c) is noted in patients with spastic hemiplegia. Answer (e) is noted in patients with spastic quadriplegia.
574. b) Tonometry, biomicroscopy (slit-lamp examination), and cycloplegic refraction are performed by an opthalmologist. The basic examination of eyes also includes ocular alignment, general external examination, examination of the media and fundi.
575. d) Visual acuity test and stereoacuity are performed at 3 years of age to diagnose refractive error and amblyopia.
576. b) 2-5 months of age
577. c) Perinatal exposure
578. e) Hepatitis B infection is not a contraindication of breast feeding because HbsAg is present inconsistently in breast milk of infected mothers.
579. e) HBIG and hepatitis B vaccine can eliminate the theoretical risks of transmission of hepatitis B virus through breast milk.
580. d) 9-15 months of age
581. e) The infant is protected.
582. a) Refer to pediatric hepatologist and parents should be counseled.
583. c) Group B Streptococcal sepsis
584. a) Malrotation of the intestine and variable degree of pulmonary hypoplasia are components of the lesion (not associated anomalies) and present in almost all cases.
585. d) Congenital diaphragmatic hernia appears with scaphoid abdomen, decreased breath sounds on the left, and heart sounds are noted on the right side.

586. e) The newborn has passed large amounts of meconium in the delivery room resulting in scaphoid abdomen.

587. a) Immediate surgical repair is **not** indicated because the patient has pulmonary hypoplasia and pulmonary hypertension. Other therapies include **sodium bicarbonate** (to keep pH more than 7.50), **volume infusions** and **dopamine** (to maintain the systemic blood pressure), **inhaled nitric oxide, surfactant, and ECMO** (extra corporeal membrane oxygenation). In patients with refractory pulmonary hypertension, **dipyridamole** can be used to expedite weaning from inhaled nitric oxide therapy. Modest hyperventilation means to keep the $PCO_2$ 25-30 mm Hg that causes pulmonary vasolatation like an alkaline pH and high $PO_2$.

588. e) Increased GE reflux is noted in almost all patients who have required ECMO therapy.

589. e) Severe perinatal asphyxia does **not** occur in ECMO therapy but occurs during and after the delivery process. ECMO therapy can cause transient and permanent developmental delays.

590. e) Juvenile nasopharyngeal angiofibromas peak in adolescent and preadolescent boys and also noted less than 2 years of age. He has no bleeding disorder, therefore, answers (a) and (c) are wrong. Answer (d) is wrong because the incidence of Kiesselbach plexus bleeding decreases during adolescence.

591. e) CT scan with contrast or MRI is the initial procedure of choice. Arteriography, embolization, and extensive surgery may be required.

592. d) Clindamycin

593. e) Please remember, retropharyngeal nodes involutes after 5 years of age. Retropharyngeal abscess is common in less than 3-4 years of age and presents with bulging of posterior pharyngeal wall in less than 50% of cases. The patient may also appear with stridor, respiratory distress, and refuse to move the neck.

594. e) Left lateral pharyngeal abscess sometimes displaces the left tonsil.

595. a) Right peritonsillar abscess; this is common in **adolescents.** There is usually the recent history of acute tonsillopharyngitis. **An assymmetric tonsillar bulging is diagnostic.**

596. b) Acute epiglottitis; less common in the USA due to H. influenzae type b vaccinations but still common in unimmunized or underimmunized children between 2-4 years of age.

597. a) The patients with spasmodic croup presents without fever and viral infections. The allergy and psychological factors are important. The children are usually symptomatic during the evening and nights. Laryngoscopy usually reveals pale, watery edematous larynx **but normal epithelium.** In acute infectious laryngotracheobronchitis, the laryngeal epithelium appears erythematous, edematous, and destroyed.

598. e) S. aureus; answers (a) and (b) also cause bacterial tracheitis.

599. e) Parainfluenza viruses (types 1, 2, and 3) are responsible for 75% of cases.

600. e) H. influenzae type b

601. c) Streptococcus pyogenes, S. pneumoniae, and S. aureus are the most common organisms.

602. e) Parainfluenzae viruses (types 1 and 2); type 3 causes bronchiolitis and pneumonia.

603. c) Croup

604. d) An expected mental retardation (2.5% of the population) is higher than observed mental retardation (1.1% of all school children) because it is more difficult to diagnose mild mental retardation.

605. b) A protein requirement is 9.3 grams/day.

606. d) A fat requirement is 30 grams/day.

607. e) Breast milk contains LC-PUFA.

608. e) Give the child to the mother until he stops crying, then examine.

609. e) At least 24 hours

610. c) Happy and relaxed mother

611. e) Otitis externa is not decreased. Breast feeding also decreases occult blood loss and atopic eczema.

612. d) Breast feeding does not decrease jaundice.

613. e) Genital culture positive for herpes is **not** a contraindication for breast-feeding. Mother should wash her hands before breast feeding. Breast-feeding is allowed in mastitis. Other contraindications to breast-feeding are active TB, typhoid fever, neurosis, and psychosis.

614. e) Central pontine myelinolysis syndrome manifests with confusion, agitation, flaccid or spastic quadriparesis, and death. This is common in patients who are treated for chronic hyponatremia than for acute hyponatremia. This is rare in children. The sodium should not be corrected more than 12 mEq per day.

615. c) Aldosterone increases sodium absorption and potassium excretion in the cortical collecting ducts.

616. d) Peaking of the T waves; Answers (a), (b), (c), (d) and asystole are also noted in hyperkalemia.

617. d) Cardiac toxicity appears before the clinical manifestations (e.g., weakness, tingling, and numbness).

618. c) "Mr. Yuk" stickers are attractive to children younger than 3 years. Phone numbers of pediatricians are also useful. **First,** poison control center should be notified before the ingestion of syrup of ipecac.

619. a) Child-resistant packaging closure did **not** work properly in 65% of cases; answer (b) is correct in 20% of cases; answer (e) is correct in 18% of cases.

620. d) Parent should **not** buy larger helmets. Parents should buy appropriate size helmets those with a firm polystyrene liner.

621. a) Formal driver education courses are ineffective in decreasing collisions because it allows teens to drive. Graduated licensing laws consist of three steps (e.g., initial restrictions of number of passengers and late night driving hours) and reduce the fatal crashes as much as 50%.

622. b) Respiratory failure

623. d) Amrinone is a peripheral vasodilator like dobutamine.

624. e) High dose of dopamine causes vasoconstriction. Answers (a), (b), (c), and (d) also reduce the afterload.

625. e) Hemorrhagic shock encephalopathy syndrome.

626. e) Interstitial and alveolar edema; this boy developed ARDS (acute respiratory distress syndrome) due to aspiration of gastric fluid contents. The onset of ARDS is very sudden with aspiration and gradual with acute neurologic injury. ARDS can occur due to an infection.

627. c) To keep the low tidal volume (6-7 mL/kg) resulting in permissive hypercapnia ($PaCO_2$ 55-70 mmHg). Increased PEEP recruits alveoli and improves oxygenation by reducing intrapulmonary shunting. PEEP is gradually increased (2-4 cm $H_2O$) in order to achieve the oxygen requirements ($FiO_2$) less than 60% and to prevent tissue hypoxia ($PaO_2$ 55-80 mm Hg, oxygen saturation 88-95%). A high PEEP (above 15 cm $H_2O$) decreases venous return and reduces cardiac output. A high tidal volume (10-15 mL/kg) or high PIP (more than 30 cm $H_2O$) cause barotrauma, volutrauma, air-leak syndromes, and increased release of inflammatory cytokines.

628. e) Pneumatosis intestinalis occurs in NEC.

629. a) Biliary atresia

630. c) CNS

631. e) Carboxyhemoglobin levels (HbCO); mild (less than 20% HbCO), moderate (20-40% HbCO), and severe (40-60% HbCO).

632. e) Below 35° C

633. a) 0-1 year of age, especially less than 1 month of age.

634. d) Chromosome 17

635. b) Autosomal dominant

636. e) Head MRI or CT scan is **not** indicated unless the patients have CNS involvement. However, blood pressure measurements should be part of yearly physical evaluation.

637. d) Incontinentia pigmenti is X-linked dominant inheritance. Other multifactorial inheritance are cleft lip with cleft palate and isolated cleft palate.

638. d) X-linked dominant

639. b) 3-5%

640. d) 18%

641. c) 5%

642. b) 4%

643. b) 9%

644. c) Phenylketonuria

645. c) Hawkinsinuria

646. e) Gaucher disease type 1

647. c) 50 mg/dL; a serum glucose level less than 50 mg/dL is considered hypoglycemia.

648. e) Facilitated diffusion (carrier-mediated process)

649. b) Plasma free fatty acids are **less** than 1.5 mmol/L

650. e) Ketotic hypoglycemia occurs in children between 18 months and 5 years of age and resolves spontaneously by 8-9 years of age. They may have seizures or become comatose by midmorning. Sometimes, children did not get breakfast because parents were sleeping late resulting in hypoglycemia.

651. e) Reduced plasma alanine levels; plasma insulin concentrations are low (5-10 $\mu$U/mL or less), therefore the hypoglycemia secondary to hyperinsulinemia is excluded.

652. d) Adrenal hemorrhage; it may be due to trauma, anoxia, or severe stress. It occurs in infants of a diabetic mother, LGA, or after a breech delivery.

653. e) Reassurance; this is normal periodic breathing that persists up to 36 weeks gestational age in preterm infants. Periodic breathing is also noted intermittently in full-term infants during sleep in the first months of life.

654. b) Renal vein thrombosis

655. e) Small left colon syndrome

656. e) Familial hyperinsulinemic hypoglycemia (previously called nesidioblastosis); the newborn is very large and develops hypoglycemia that is unresponsive to all medical therapies.

657. b) Islet **beta cell $\mathbf{K_{ATP}}$ channel** (either the sulfonylurea receptor or the Kir 6.2 inward rectifier $K^+$ channel)

658. e) Suspected hypertension (BP is above 95th percentile)

659. c) A follow up examination after 6 months is recommended (BP is between 90th and 95th percentiles).

660. e) BP should be measured on three separate occasions prior to further interventions (BP is less than 90th percentile).

661. c) Amphetamine overdose

662. e) Normal vaginal discharge; a pH less than 4.5 indicates either candida or normal vaginal discharge; a pH more than 4.5 in a vaginal discharge indicates trichomonas or bacterial vaginosis.

663. e) Bacterial vaginosis; clue cells are absent in trichomonas infections. Trichomonads are present in trichomonas infections. Mycelia is present in candida infections.

664. e) $CH_{50}$ measures the intactness of the entire complement pathways. Extremely low $CH_{50}$ values are characteristic of genetic deficiencies in the complement system.

665. e) A delay or improper transport of the specimen to the laboratory is the most common cause of abnormal $CH_{50}$ values.

666. a) Selective IgA deficiency

667. a) Chediak-Higashi syndrome (CHS) is an autosomal recessive disorder. CHS has a tendency to develop severe lymphoma-like syndrome.

668. c) DHR detects oxidant production because it increases fluorescence when oxidized by hydrogen peroxide. Nitroblue tetrazolium (NBT) dye test is widely used but DHR test is more accurate and replaces the NBT test.

669. c) Maculopapular

670. d) IgE-mediated. However, usually insect bites (e.g., mosquitoes, flies, fleas) are **not** an allergic response but a localized skin reaction. **Occasionally,** insect bites can cause immediate or delayed hypersensitivity reactions.

671. a) Allergic rhinitis; this patient has seasonal allergic conjunctivitis that is typically associated with allergic rhinitis and triggered by ragweed or grass pollens.

672. d) Atopic dermatitis is present is almost all patients with atopic keratoconjuncitivitis that is the diagnosis in this patient. A large number of patients also have asthma.

673. e) Staphylococcal blepharitis

674. b) Staphylococcus aureus

675. c) Penicillin G

676. d) Ampicillin and gentamicin are used for syngergistic bactericidal activities.

677. a) Term delivery occurs in late onset neonatal listeriosis; preterm delivery, low birthweight, and obstetric complications are also the characteristic features of early onset of neonatal Listeria infections (i.e., less than 5 days).

678. c) Mortality rate is less than 10%; term delivery, uncomplicated pregnancy, and nosocomial outbreaks are also the characteristic features of late onset of neonatal Listeria infection (i.e., 5 days or more)

679. c) Neisseria meningitidis causes acute meningococcemia that initially mimic viral illness.

680. a) Fever (71% of cases); petechiae and/or purpura (49% of cases), hypotension (42% of cases), vomiting (34% of cases), and lethargy (30% of cases) are also noted.

681. e) Nasopharynx; isolation of the organism from nasopharynx does not indicate an invasive disease.

682. a) Penicillin G; cefotaxime or ceftriaxone is an alternative therapy and generally is part of initial empiric regimens. Chloramphenicol is used in patients who are allergic to beta-lactam antibiotics.

683. b) S. Typhi enteric fever; the characteristic features are relative bradycardia, unremitting high fever (stepwise fashion), and **rose spots** (rash on the lower chest and abdomen).

684. a) Blood culture (40-60% of cases); stool and urine cultures are positive after the 1st week; bone marrow culture becomes positive during later stages of the disease when the blood culture is negative.

685. e) Bone marrow (85-90% of cases) and is less influenced by prior antibiotic therapy.

686. e) Shigella sonnei

687. a) Shigella sonnei is the most common cause of bacillary dysentery. However, Shigella dysenteriae serotype 1 infections can occur in massive epidemics. Contaminated food (e.g., salad) and water are important vectors.

688. d) Neurologic findings (40% of hospitalized children) are convulsions, nuchal rigidity, confusion, lethargy, headache, and hallucinations.

689. e) Unknown; Shiga toxin does not cause neurologic manifestations. Answers (b), (c), and (d) may be associated findings.

690. c) A regimen of INH and rifampin for 6 months plus first 2 months of treatment with pyrazinamide (PZA).

691. e) A regimen of INH, RIF, and PZA for the first 2 months followed by INH and RIF for a total duration of at least 9 months. A fourth drug (e.g., ethambutol or streptomycin) should be added for disseminated TB and when drug-resistance is suspected.

692. d) The primary drug resistance occurs when the patient is infected with Mycobacterium tuberculosis that is already resistant to a particular medication (e.g., INH or RIF). Answer (d) is an important cause of secondary drug resistance.

693. a) A regimen of RIF, PZA, and EMB for 9 months is usually adequate. When resistance to INH and RIF occurs, the total duration of therapy should be 12-18 months, and twice-a-week regimen should not be implemented. The patient with drug-resistance tuberculosis should be managed by an expert in this field.

694. e) Chlamydia pneumonia; the chest X-ray appears worse than the patient's clinical conditions.

695. c) Nasopharynx; infants also develop conjunctivitis and pneumonia.

696. c) **PDA (patent ductus arteriosus),** pulmonary artery stenosis, and myocarditis are present in patients with congenital rubella syndrome. However, the most common clinical manifestation is **IUGR (intrauterine growth retardation)**. Other clinical features may include micropthalmia, hepatitis, meningoencephalitis, thrombocytopenic purpura, pneumonia, and mental retardation.

697. b) Repeatedly waking the child to take him/her to the bathroom is **not** useful and may cause anger. Enuretic children are more difficult to awaken than nonenuretic age-matched children.

698. b) After 4 years of age

699. c) 4-6 months of age; complementary food, (e.g., cereals, vegetables, fruits, meats, and eggs) should be started; one food should be given at a time, the 2nd food should be spaced at least 3-4 days to detect food related adverse effects.

700. e) Cereals, vegetables, fruits, meats, and finally eggs; the orders are not very important.

701. e) Colic; colic rarely persists after 3 months of age.

702. e) The use of carminatives before feeding **cannot** prevent the colic attacks. Sedation is occasionally indicated in infants with prolonged attacks. Temporary hospitalization is indicated in extreme cases. Colic attacks can be prevented by burping, proper feeding techniques; physicians should be supportive and sympathetic.

703. b) Bleeding

704. b) Jaundice

705. e) Hypoparathyroidism occurs in the neonate due to hyperparathyroidism in the mother secondary to parathyroid adenoma. Maternal hypercalcemia causes suppression of fetal parathyroid glands resulting in hypocalcemic tetany that usually develops during the first 3 weeks of life.

706. e) Treat the underlying cause (e.g., oxygen therapy for patients with hypoxia and metabolic acidosis; fluid therapy for patients with dehydration and metabolic acidosis; antibiotics therapy for patients with infection and metabolic acidosis). Sodium bicarbonate is used if metabolic acidosis persists (base deficit is –10.0 or more) even after the underlying cause has been corrected or the cause is unknown. THAM solution is used when there is metabolic acidosis and hypernatremia.

707. d) The use of sodium carbonate in patients with DKA and lactic acidosis is controversial. Other conditions in which sodium bicarbonate is used are methanol intoxication, propionic acidemia, chronic metabolic acidosis (e.g., renal tubular acidosis, chronic renal failure).

708. e) Respiratory acidosis should be corrected first with ventilator therapy before the correction of metabolic acidosis because sodium bicarbonate metabolized to carbon dioxide that rapidly diffuses the blood-brain barrier and causes CNS acidosis. Intravenous carbicarb therapy has an advantage to sodium bicarbonate therapy in patients with respiratory insufficiency and metabolic acidosis because carbicarb produces less carbon dioxide.

709. c) **Less than 60 mm Hg** in a full-term newborn is considered low BP.

710. b) **Less than 70 mm Hg** from 1 month to 1 year of age is considered low BP.

711. b) **Less than 80 mm Hg** in a 5 year old child is considered low BP; the formula:
Less than 70 mm Hg + 2 x age from 1-10 years.

712. c) **Less than 90 mm Hg** in children older than 10 years of age is considered low BP.

713. e) Reassurance because all findings are the upper limit of normal for a 12-year-old child. However, exercise is good for all healthy children and weight loss is indicated in obese children.

714. a) Within 1 hour

715. d) Reassurance; most infants pass one or more stools per day but some infants pass stool with normal consistency every 36-48 hours.

716. e) A rectal examination should be performed. A finger dilatation is useful in spastic or tight anal sphincters that causes constipation.

717. b) Serum phosphorus levels are always low (less than 4 mg/dL); serum calcium levels are either normal or low.

718. d) Normal; answers (a), (b), (c), and (d) represent a 10% dehydration. A mild dehydration (3-5%) is manifested by a normal pulse rate or tachycardia, decreased urine output, thirst, and normal physical examination.

719. e) Hypotension is absent in moderate dehydration (7-10%); other findings in patients with moderate dehydration are tachycardia, lethargy, little or no urine output, sunken fontanel, sunken eyes, dry mucous membranes, cool, and delayed capillary refill.

720. c) Urine output is **absent** in patients with severe dehydration (10-15%); other findings in patients with severe dehydration are rapid pulse rate, no tears, tenting of the skin, very delayed capillary refill, cold skin, very sunken eyes, and very sunken fontanel.

721. b) 5-9 years of age.

722. c) **In the rear seat facing backward**; this position is recommended for infants younger than 1 year of age or weighing less than 20 lbs. Infants weighing less than 20 lbs either use an infant seat or be placed in a 'convertible' infant-toddler child restraint device.

723. d) **In the rear seat facing forward**; use either convertible or toddler seat.

724. d) 13 years of age; children younger than 13 years of age should never sit in the front seat, especially if the airbag is present.

725. b) **Cardiogenic shock**; this is a characteristic presentation of a cardiogenic shock.

726. b) **Septic shock**; warm extremities are due to peripheral vasodilatation; bounding pulses and tachycardia are due to high stroke volume and wide pulse pressure. This is a characteristic presentation of a septic shock.

727. a) **Hypovolemic shock**; a supine hypotension and **tachycardia are hallmarks of** hypovolemia. The patients with an early hypovolemic shock may appear normal or only mildly cool distal part of the extremities. This is a characteristic presentation of a hypovolemic shock.

728. c) Laryngospasms

729. e) Nausea and vomiting (40-50% of cases) and up to 80% of cases in high-risk patients. Answers (a), (b), (c), and (d) are also postoperative complications of anesthesia.

730. d) Metabolic acidosis occurs; death occurs (70% of cases) due to shock and cardiac dysrhythmias with unresponsive ventricular fibrillation. This syndrome is familial.

731. b) Succinylcholine also causes neuroleptic malignant syndrome like inhalation anesthesia.

732. d) Six cafe au lait macules **more than 15 mm** in greatest diameter in a postpubertal adolescent; thinning of long bone cortex with or without pseudoarthrosis are also diagnostic features. A first degree relative (parent, sibling, or offspring) with neurofibromatosis 1 is also diagnostic. The individual should have two or more diagnostic features that are mentioned in all choices.

733. c) Prader-Willi syndrome

734. c) Angelman syndrome

735. d) Trisomy 18 (Edwards syndrome)

736. e) Postmature infants usually have paler and thicker skin than term or preterm infant without the presence of anemia.

737. c) Vacuum-assisted (75% of cases)

738. c) All retinal hemorrhage cases resolve by 4 weeks of age; about 85% of cases resolve by 2 weeks of age.

739. c) After 28-30 weeks of gestation

740. e) Thoraco-omphalopagus (28% of cases)

741. e) Pulmonary circulation; next is pulmonary lymphatics.

742. c) 10-20 cm $H_2O$ (ranges from 10-50 cm $H_2O$); normal breathing only needs 4 cm $H_2O$ pressure.
743. e) Strictures after NEC does not occur by 36 hours of age.
744. c) The patients with colonic atresia appear with constipation at birth.
745. b) Ampicillin
746. d) CMV vaccines are under study; answers (a), (b), and (c) infections can be prevented by maternal immunizations. Toxoplasmosis can be prevented by appropriate diet (i.e., well-cooked meat) and avoidance of exposure to cat feces.
747. e) He has been taking anabolic steroids. The most common oral forms are 17-alpha-methyl derivatives of testosterone and injectable forms are esters of testosterone and 19-nortestosterone.
748. e) Pelvic inflammatory disease
749. e) N. gonorrhoeae and Chlamydia trachomatis are the most common organisms in patients with PID. Answers (a), (b), (c), (d), Streptococci, Peptostreptococcus species, and Bacteroides species also cause PID.
750. e) Large, vacuolated lymphocytes are **atypical lymphocytes**. Answers (a), (b), (c), (d), acute viral illness, CMV, viral hepatitis, and ALL (acute lymphocytic leukemia) cause lymphocytosis.
751. e) Meningococcal meningitis; the patients with a properdin deficiency can also develop dermal vasculitis or discoid lupus.
752. b) Autosomal dominant
753. e) Xerosis or dry skin
754. d) CT-scan of the sinuses is the gold standard for patients with a sinus disease. Sinus diseases are common is patients with asthma. The treatment for occult sinus disease can improve asthma.
755. a) Gastroesophageal reflux, rhinitis, and sinusitis are commonly noted in patients with asthma.
756. d) Intravenous hydration (**not** oral hydration), intramuscular or intravenous $H_1$ and $H_2$ antihistamine antagonists, and inhaled beta-agonist are also used in patients with anaphylaxis.
757. e) IgE-mediated
758. a) Food; the plasma beta-tryptase level is usually **not** elevated in food-induced anyphylactic reactions. This is elevated in all other anaphylactic reactions. This is more stable and remains elevated for several hours. The presence of serum IgE antibodies does not make a definitive diagnosis. Plasma histamine levels are unstable and difficult to measure.
759. c) The diagnosis of juvenile ankylosing spondylitis is confirmed when x-ray reveals sacroiliitis.
760. a) This patient has a right hip joint transient synovitis (toxic synovitis). Aspiration of the hip joint is performed by an orthopedic surgeon and usually indicted to rule out suppurative arthritis. The joint fluid in transient synovitis usually reveals absence of bacteria and WBCs. The cause is unknown but may be due to a viral postinfectious arthritis.
761. e) Hepatitis B arthritis-dermatitis syndrome
762. c) 10-28 days after vaccination
763. c) Uncommon in preadolescent children and in males
764. e) Corticosteroids therapy causes osteopenia.
765. d) **Anti-DNA antibody to native DNA in abnormal titer is more specific for lupus and reflects the degree of disease activities.** Elevated ANA titers can be present with or without SLE and in many other conditions (e.g., drug-induced lupus, juvenile arthritis, scleroderma, juvenile dermatomyositis, vasculitis syndrome, chronic active hepatitis, infectious mononucleosis, and hyperextensibility). ANA titer is an excellent screening test. Anti-Smith antibody is noted especially in patients with SLE but does **not** measure disease activities. In an active disease, CH50, C3 and C4 levels are decreased. Hypergammaglobulinemia is also noted in patients with SLE.
766. d) SLE presents with thrombocytopenia (less than $100{,}000/mm^3$).
767. a) SLE presents with **nonerosive** arthritis (i.e., tenderness, swelling, effusion) that involves two or more peripheral joints.
768. e) Group A Streptococcus upper respiratory tract infections are associated with an acute rheumatic fever and rheumatic heart disease.
769. c) M type 4 does not cause recurrence of rheumatic fever.
770. e) M type 2 is uncommon; most common M types are 1, 3, 5, 6, 18, and 24.
771. e) The presence of a fever is a minor criterion. Chorea is also a major manifestation. Sydenham chorea occurs in about 10-15% of patients with acute rheumatic fever.
772. e) The supportive evidence of group A Streptococcus infection in patients with rheumatic fever includes a positive throat culture, rapid streptococcal antigen test, elevated or increasing streptococcal antibody titer. Other minor manifestation is the presence of C-reactive protein. The presence of **two major** or **of one major and two minor** manifestations indicates a high probability of acute rheumatic fever if there were a prior streptococcal upper respiratory tract infection.

773. a) Sialic acid prevents activation of the alternate complement pathway in the absence of type-specific antibody. Therefore, capsular polysaccharide protects the GBS organism from opsonophagocytosis in the nonimmune infants. Type III strain is the most common strain that produces late-onset neonatal sepsis and meningitis.

774. b) Enterococcus faecalis (80-90% of cases).

775. e) A combination of vancomycin and gentamicin is recommended if the enterococcus is sensitive to those medications. Gentamicin is bactericidal but vancomycin is not bactericidal. The same therapy is indicated if the patient is allergic to penicillin. Vancomycin resistant enterococcus should be treated with linezolid.

776. e) Sulfar granules are characteristic of actinomyces.

777. a) Actinomyces israelii

778. a) Penicillin is the preferred therapeutic drug. Answers (b), (c), (d), and (e) can also be used in patients with actinomyces.

779. d) Rickettsia rickettsii infection is more common during the spring through fall. The boy is diagnosed to have RMSF (Rocky Mountain Spotted fever). RMSF occurs due to tick bites.

780. e) G6PD deficiency

781. a) Doxycycline can be used safely in children younger than 9 years because tooth discoloration is dose-dependent and children may not need multiple courses.

782. d) Measles; conjunctival inflammation, especially a transverse line and photophobia suggest measles. Koplik spots appear **after** these manifestations.

783. a) Grayish white dots usually appear opposite the lower molars.

784. d) Serous exudates and proliferation of endothelial cells

785. c) PCR analysis of CSF is a practical diagnostic test for patients with HSV encephalitis. PCR analysis can detect viral DNA in CSF. If this test is negative, brain biopsy may be necessary to make the definitive diagnosis.

786. c) Hypercalciuria (up to 40% of cases) is more common than hypercalcemia.

787. e) Absence of functional calcium-sensing receptors in the parathyroid glands; therefore, parathyroid glands are unable to monitor the extracellular calcium concentration resulting in elevated PTH secretions despite hypercalcemia.

788. a) Autosomal recessive

789. e) Reassurance, thumb sucking is normal in infancy and toddlerhood.

790. e) Malalignment of the teeth

791. b) Praise for substitute behaviors; answer (a) is an alternative therapy. Parents should ignore thumb sucking and praise the child for positive behaviors.

792. e) This boy is dyslexic. ADHD (attention-deficit/hyperactivity disorder) can be present in patients with dyslexia. Dyslexic patients have difficulties in text reading, word recognition, and decoding.

793. a) Dyslexia

794. b) Remediation of the reading problem is useful in patients when dyslexia is diagnosed early in life. Remediation includes early language and phonologic skills.

795. d) Accomodation (e.g., tape recorder, recorded books, tutorial services, and laptop computer with spelling checkers)

796. c) Multiple choice tests are difficult for dyslexic children.

797. e) Lightly pigmented hair along the medial border of the liabia is noted in sexual maturity rating (SMR) stage 2 in early adolescence (i.e., 10-13 years of age). However, **rarely**, premature puberty is noted in female children who were sexually abused.

798. e) Diarrhea is absent in children with sexual abuse.

799. a) Opening size of the hymen has no diagnostic value.

800. e) The child should be re-examined in the **prone knee-chest position** that allows better visualization of the genitalia.

801. e) Reassurance; this is a normal finding in this young children.

802. e) Reassurance; this is Riedel lobe of the liver that is a normal finding.

803. e) Reassurance; breast-fed infants may experience frequent small, loose stools in first 2-3 weeks of life, then may experience infrequent stools i.e., **not to pass any stool for 1-2 weeks** followed by normal, soft stools.

804. e) This girl has **regurgitation;** 80% of patients improve by 6 months of age and 90% of patients improve by 12 months of age.

805. a) Laryngomalacia

806. e) The infants with laryngomalacia has a **low pitched,** inspiratory stridor, that worsens with crying, agitation, and feeding. The infants with vocal cord paralysis, laryngeal web, and laryngeal atresia usually appear with **high pitched** cry.

807. c) Flexible laryngoscopy

808. b) Modified Blalock-Taussig shunt (i.e., Gore-Tex conduit anastomosed side to side from the subclavian artery to the homolateral branch of the pulmonary artery) is the preferred surgical procedure in patients with a tetralogy of Fallot.

809. e) Rashkind balloon atrial septostomy is the initial procedure of choice in patients with transposition of great arteries. Arterial switch (Jatene) operation is the final procedure of choice.

810. e) Osler-Weber-Rendu syndrome (hereditary hemorrhagic telangiectasia type 1) is associated with angiomas of the GI tract, liver, nasal and buccal mucous membranes.

811. c) Mobitz type I (Wenckebach type) is one variant of 2nd-degree heart block.

812. c) Mobitz type II

813. a) Hypopigmentation is absent. The patients with Fanconi anemia also appear with hypopigmentation, cafe-au-lait spots, and hypoplastic thumbs.

814. a) Autosomal recessive

815. e) Turner syndrome does **not** cause aplastic anemia. Fanconi syndrome causes aplastic anemia. Shwachman-Diamond syndrome, appears with neutropenia and thrombocytopenia. However, both conditions progress to pancytopenia.

816. c) X-linked recessive

817. b) **Nephrogenic diabetes insipidus** is diagnosed because the male infant appears with polyuria, hypernatremia, dilute urine, elevated serum osmolality (290 mOsm/kg or higher), and decreased urine osmolality (less than 290 mOsm/kg). **Renal tubular acidosis** manifests with growth failure, metabolic acidosis, non-anion gap, and type IV manifests with hyperkalemia. **Bartter syndrome** manifests with dysmorphic features (e.g., triangular facies, dropping mouth, protruding ears, large eyes with strabismus), severe hypokalemia, metabolic alkalosis, and hypercalciuria. **Gitelman syndrome** (a variant of Bartter syndrome) manifests later in life with muscle cramps and spasms due to hypomagnesemia, hypokalemia, metabolic alkalosis, low urinary calcium, high urinary magnesium, absence of recurrent episodes of dehydration, and less obvious growth failure.

818. a) Potter syndrome manifests with bilateral renal agenesis, cystic renal dysplasia, or obstructive uropathy. Patients with this syndrome have 100% mortalities.

819. c) 51 mL/hour

820. c) 25 mL/min/1.73 m$^2$

821. b) 3 months of age

822. d) Septo-optic dysplasia or de Morsier syndrome appears with a triad of small anterior pituitary gland, an attenuated pituitary stock, and an ectopic posterior pituitary bright spot.

823. c) Estradiol levels vary from normal to severely elevated (more than 900 pg/mL). FSH levels are also decreased. McCune-Albright syndrome means precocious puberty, abnormal pigmentation, and polyostotic fibrous dysplasia. In boys and girls, during puberty gonadotropin secretion begins, and the response to GnRH becomes pubertal. **True (gonadotropin-dependent)** precocious puberty overrides the previous **gonadotropin-independent precocious pseudopuberty**.

824. a) Precocious puberty is **less** common. Girls with this syndrome have an **asymmetric** ovarian enlargement. In boys, genital development follows the normal pubertal development.

825. e) Long-acting analogs of GnRH is an associated therapy. For girls with persistent estradiol secretion, **aromatase inhibitors** (e.g., testolactone, letrozole or anastrozole) or **antiestrogens** (e.g., tamoxifen) inhibit the effects of estrogen on pubertal and bony maturations. Aromatase inhibitors inhibit the final step of estrogen synthesis.

826. d) Magnesium; this girl has **familial hypomagnesemia with secondary hypocalcemia.** Calcium therapy is not effective. Magnesium therapy promptly corrects hypomagnesemia and hypocalcemia. The serum magnesium level less than 1.5mg/dL (1.2 mEq/L) is abnormal. In idiopathic hypoparathyroidism, serum magnesium level is normal, serum calcium level is low (5-7 mg/dL), and serum phosphorus level is elevated (7-12 mg/dL).

827. a) Pheochromocytoma is a possible diagnosis because of paroxysmal hypertension. However, most patients with pheochromocytoma have sustained hypertension. The patients are free of symptoms between attacks of hypertension.

828. d) MBIG is taken up by chromaffin tissue anywhere in the body and is useful for small tumors that are localized. Most tumors near adrenal glands are diagnosed by ultrasonography, CT, or MRI study. Answers (c) and (e) findings are present in patients with pheochromocytomas, and neuroblastomas. Catecholamine levels are higher in pheochromocytomas, and dopamine and homovanillic acid levels are higher neuroblastomas. Neuroblastoma does not produce hypertension.

829. c) Surgical removal of the tumor is curative. Answer (d), (e), and intravenous fluids are used preoperatively to control the BP.

830. e) A precipitous drop in BP can occur during and after surgery. This should be avoided by appropriate choice of anesthesia and intravenous fluids.

831. a) Small testes and azoospermia are noted in patients with Sertoli cell-only syndrome (Del Castillo syndrome or germ cell aplasia).

832. d) 47, XXY (80% of cases); answers (b), (c), and (e) are mosaic patterns of Klinefelter syndrome.

833. e) Nonstenotic bicuspid aortic valve (33-50% of cases) is the most common cardiac defect in patients with Turner syndrome.

834. e) Chromosome analysis must be performed in girls with short statures to rule out Turner syndrome. Answers (a), (b), (c), and (d) are performed after the diagnosis of Turner syndrome.

835. d) Retinoblastoma is absent. Mental retardation is present.

836. d) The symptoms of diabetes mellitus (e.g., polyuria, polydipsia, unexplained weight loss, glucosuria, ketonuria) and random plasma glucose is 200 mg/dL and more **or** fasting plasma glucose level is 126 mg/dL and more **or** 2-hour plasma glucose during oral glucose tolerance test (OGTT) is 200 mg/dL and more are the diagnostic criteria of diabetes mellitus.

837. e) Fasting glucose levels 110-125 mg/dL (6.1-7.0 mmol/L) **or** 2-hour plasma glucose levels during the OGTT less than 200 mg/dL but 140 mg/dL and more are diagnostic criteria of impaired glucose tolerance (IGT). A fasting glucose level of 109 mg/dL (6.1 mmol/L) is the upper limit of normal.

838. a) The **palmer grasp begins** at 28 weeks gestational age; fully developed at 32 weeks gestational age; duration is 2-3 months.

839. b) The **parachute reflex begins** at 7-8 months of age; fully developed 10-11 months of age; remains throughout life.

840. b) The **Moro reflex begins** at 28-32 weeks gestational age; fully developed at 37 weeks gestational age; duration is 5-6 months.

841. b) The **tonic neck reflex begins** at 35 weeks gestational age; fully developed at 1 month of age; duration is 6-7 months of age.

842. b) The **rooting reflex (or snout) begins** at 32 weeks gestational age; fully developed at 36 weeks gestational age; less prominent after 1 month of age.

843. e) Hypoxic-ischemic encephalopathy

844. e) Hypoxic-ischemic encephalopathy

845. e) Intravenous pyridoxine (100-200 mg) usually stops seizure activities in patients with **pyridoxine dependency seizure**. Fetal distress could be due to seizure activities in utero. These children need lifelong supplementation of oral pyridoxine (10 mg/day).

846. a) Autosomal recessive

847. d) Lisch nodes (i.e., discrete nodules of the iris)

848. d) Retinoblastoma

849. e) Congenital heterochromia is a finding of Waardenburg syndrome. Heterochromia iridium (two irides have different colors) and heterochromia iridis (one iris contains two different colors) are present.

850. e) Interstitial keratitis manifests between 5-10 years of age in patients with congenital syphilis.

851. d) Hearing test; children between 0-4 months of age should startle to loud music or sounds, quiet to mother's voice, and momentarily stop activity when sound is presented at the level of conversation.

852. b) A 7-12 month old child should correctly localize to sound presented **in any plane.**

853. d) Pseudomonas aeruginosa

854. e) Group A Streptococcus

855. c) Streptococcus pneumoniae

856. a) Staphylococcus aureus

857. a) Pseudomonas aeruginosa

858. d) Herpes zoster oticus (Ramsay Hunt syndrome) patients appear with herpes vesicles in the ear canal and on the pinna, pain, facial paralysis, and sometimes, 8th cranial nerve involvements.

859. e) Pseudomonas aeruginosa; the next common organism is S.aureus.

860. a) Internal femoral torsion; the majority of children have generalized ligamentous laxity.

861. a) Internal tibial torsion is due to normal in utero positioning.

862. e) Clinical measurements are fairly accurate in patients with internal femoral torsion. Other investigations are unnecessary.

863. e) Observation; correction of an abnormal sitting habit usually resolves the torsion and allows normal growth and development.

864. a) Observation

865. a) Williams syndrome (or elfin facies syndrome) has small mandible, failure to thrive during the 1st year of life, mild mental retardation, and typical “cocktail party patter” personality.
866. b) Arrythmias or coronary artery disease
867. a) Supravalvular aortic stenosis and ASD are also present in Williams syndrome.
868. d) Biphosphonates blocks the bone resorption and normalizes serum calcium in patients with an idiopathic hypercalcemia (e.g., Williams syndrome, familial hypocalciuric hypercalcemia).
869. a) Activated charcoal should **not** be used because it does **not** bind with caustics (e.g., acid or alkali); contaminated clothing should be removed, ingested agents should be rinsed from the mouth, keep NPO, intravenous fluids, and do not give prophylactic antibiotics. The use corticosteroids and esophageal stents are controversial.
870. e) Mostly occurs in female; may be due to genetic abnormality of X chromosome ; may be lethal in males during fetal life.
871. a) Agenesis of the corpus callosum
872. b) Laboratory error (low sodium; normal chloride)
873. d) Hyponatremic dehydration (low sodium and chloride; high BUN)
874. e) Pseudohyponatremia (low sodium; very high glucose)
875. c) Hypernatremic dehydration (high sodium, chloride, and BUN)
876. a) Increased ADH secretion (low sodium; chloride, and BUN)
877. b) Diabetes insipidus (high sodium, chloride, BUN; low specific gravity)
878. a) Salt poisoning (high sodium, chloride; normal BUN, specific gravity)
879. e) Maintenance salt was not given (low sodium, chloride; normal BUN, specific gravity)
880. c) Acute renal failure (low sodium; high potassium and BUN)
881. d) Congenital adrenal hyperplasia (low sodium, chloride; high potassium)
882. e) Renal failure
883. b) Diabetes mellitus
884. c) Wilson disease
885. c) Normal
886. e) Otitis media (conductive hearing loss)
887. a) CMV (sensorineural hearing loss)
888. b) Mixed hearing loss
889. c) Rheumatic fever
890. e) Lyme disease
891. a) Cefaclor (mostly urticarial lesions)
892. b) Kawasaki disease
893. d) Sarcoidosis
894. b) Lymphoid tissue (e.g., tonsil, spleen)
895. a) Neural tissue (e.g., brain, skull)
896. d) General growth (e.g., liver, bone, blood volume)
897. e) Genital growth (e.g., testes, ovary, uterus)
898. c) Thymus
899. c) Constitutional short stature
900. e) Genetic short stature
901. d) Hypothyroidism
902. b) Craniopharyngioma
903. a) Congenital adrenal hyperplasia
904. b) Respiratory acidosis (high PCO$_2$, bicarbonate; low pH)
905. a) Respiratory alkalosis (low PCO$_2$, bicarbonate; high pH)
906. c) Metabolic alkalosis (normal PCO$_2$; high pH, bicarbonate)
907. d) Metabolic acidosis (low PO$_2$, PCO$_2$, pH and bicarbonate)

908. e) Compensated respiratory acidosis (high $PCO_2$, bicarbonate; normal pH)
909. e) Optic nerve
910. c) Optic chiasma
911. d) Right optic tract
912. a) Left optic tract
913. b) Lateral geniculate body
914. c) Normal
915. a) Sickle cell disease
916. e) Sickle cell trait
917. b) Hemoglobin SC disease
918. d) Thalassemia major
919. a) Beta thalassemia minor
920. e) Alpha thalassemia trait
921. c) Iron deficiency anemia
922. d) Sickle beta thalassemia
923. b) Sickle alpha thalassemia
924. e) Prolonged expiration phase (i.e., obstructive type) e.g., BPD, asthma, bronchiolitis, emphysema, and meconium aspiration.
925. d) Reduced inspiratory and expiratory phases (e.g., restrictive type) e.g., RDS, pneumothorax, pneumonia, collapse, diaphragmatic hernia, persistent pulmonary hypertension due to collapse, pulmonary interstitial emphysema, and TB.
929. e) Hypochromic microcytic
930. d) Heinz bodies
931. c) Macrocytic anemia
932. a) Target cells
933. b) Schizocytes
934. e) Double peaks, prenatal peak is due to rapid growth of neurones and postnatal peak is due to rapid growth of glia.
935. c) Peaks within few months after birth.
936. a) Peaks around 4-5 months of age.
937. b) Increased polymorphs, increased protein, decreased glucose
938. d) Increased lymphocytes, increased protein, decreased glucose
939. c) Increased monocytes, increased protein, decreased glucose
940. a) Increased lymphocytes increased protein, normal glucose
941. e) First, increased lymphocytes then polymorphs, increased protein, and normal glucose unless abscess ruptures.
942. d) Protein 6%, fat 50%, carbohydrate 44%
943. e) Protein 20%, fat 50%, carbohydrate 30%
944. a) Protein 15%, fat 35%, carbohydrate 55%
945. c) RSV
946. d) Parainfluenza viruses
947. e) Rhinoviruses
948. b) Viruses
949. a) Staphylococcus aureus
950. e) High in carbohydrates; low in fats and proteins
951. d) Bacteria is destroyed; casein broken down
952. c) Fat broken down and easily digested
953. b) Softer casein and less allergenic lactalbumin
954. a) Low in vitamin D, iron, sodium, and folic acid. More in potassium, chloride, linoleic and arachidonic acids
955. e) Above and medial to eyes
956. a) Suboccipital area

957. b) Temporal areas and eyes
958. c) Trigeminal areas particularly mastoid
959 d) Over maxilla and teeth
960. b) Increase last P.M. dose of NPH insulin
961. c) Increase this A.M. dose of regular insulin
962. d) Increase this A.M. dose of NPH insulin
963. e) Increase this P.M. dose of regular insulin
964. a) Decrease this P.M. dose of regular insulin
965. c) Brassy (e.g., tracheitis, habit cough)
966. e) Staccato (e.g., chlamydia pneumonitis)
967. a) Cough with stridor (e.g., laryngeal obstruction, pertussis)
968. b) Disappears with sleep (e.g., habit cough, mild hypersecretory states such as in cystic fibrosis and asthma)
969. d) Nocturnal cough (e.g., upper or lower respiratory tract allergic reaction, or both; sinusitis)
970. e) Loose (discontinuous), productive (e.g., bronchitis, asthmatic bronchitis, bronchiectasis, cystic fibrosis)
971. a) Most severe on awakening in morning (e.g., cystic fibrosis, chronic bronchitis, bronchiectasis).
972. d) Tight (wheezy) (e.g., reactive airways)
973. c) Paroxysmal (with or without gagging and vomiting) (e.g., pertussis syndrome, cystic fibrosis, foreign body)
974. b) With vigorous exercise (e.g., exercise-induced asthma, bronchiectasis, cystic fibrosis)
975. c) Cataracts and PDA (patent ductus arteriosus)
976. e) Periventricular calcifications
977. a) Limb hypoplasia
978. d) Hydrocephalus
979. b) Hydrops
980. b) Carditis
981. a) Deafness
982. d) Nephrotic syndrome
983. c) Rhinitis
984. a) Increased iron absorption from GI tract
985. b) Decreased iron absorption from GI tract
986. a) Increased iron absorption from GI tract
987. b) Decreased iron absorption from GI tract
988. c) Prostaglandin infusions cause apnea
989. e) Beckwith-Wiedemann syndrome
990. a) Gastroschisis
991. b) Sensorineural hearing loss
992. d) Sturge-Weber disease
993. b) Broad thumbs
994. e) Cystic hygroma
995. a) Conductive hearing loss
996. c) Moonlike face
997. d) "Greek helmet" facies
998. e) Arterial switch (Jatene); Rashkind balloon atrial septostomy is the initial procedure of choice.
999. b) Norwood procedure
1000. a) Blalock-Taussig shunt
1001. d) Starnes procedure
1002. c) Balloon valvuloplasty
1003. b) Sudden death

| | | |
|---|---|---|
| 1004. | a) | Well-developed, well-nourished child |
| 1005. | d) | Scoliosis |
| 1006. | c) | "Snowman sign" (figure eight) |
| 1007. | e) | ECG reveals a characteristic left axis deviation that is also noted in endocardial cushion defects. |
| 1008. | e) | Optic neuritis |
| 1009. | d) | Vestibular damage |
| 1010. | c) | Body fluid turns orange |
| 1011. | b) | Peripheral neuritis is uncommon in children. |
| 1012. | a) | Elevated uric acid levels |

1. A routine physical examination in a 2-year-old boy reveals rooting reflex. The most likely diagnosis is:
   a) Normal
   b) Cleft lip
   c) Cleft palate
   d) Visual defects
   e) CNS abnormalities

2. A child begins to develop sense of individuality. She is aware of strangers. She is frightened by separation from her parents. The most likely age of this girl is:
   a) 6 months
   b) 8 months
   c) 10 months
   d) 12 months
   e) 15 months

3. A 12- month-old girl is toilet trained. The long-term outcome of this girl is:
   a) Questionable
   b) Good
   c) Very good
   d) Average
   e) Excellent

4. A 3-year-old boy can read. The long-term outcome of this boy is:
   a) Average
   b) Good
   c) Very Good
   d) Excellent
   e) Questionable

5. The first visible sign of puberty in girls is:
   a) Onset of menstruation
   b) Axillary hairs
   c) Pubic hairs
   d) Appearance of breast buds
   e) Enlargement of clitoris

6. In boys, testicular enlargement begins as early as:
   a) 8 years of age
   b) 8½ years of age
   c) 9 years of age
   d) 9½ years of age
   e) 10 years of age

7. The development of underarm odor and faint genital hair is most likely due to the following hormone:
   a) FSH
   b) LH
   c) GnRH
   d) Testosterone
   e) Dehydroepiandosterone sulfate (DHEAS)

8. A 12-month-old boy appears with failure to gain weight for the last 3 months. The boy has a history of repeated regurgitation of food after eating. Mother denies nausea, abdominal pain, dysuria, diarrhea, and bloody stools. The boy was completely asymptomatic prior to this episode. He was born by NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. He was discharged home at 2 days of age. The mother is living alone with the child for the last 3 months. The most likely diagnosis is:
   a) Malrotation
   b) Volvulus
   c) Food allergy
   d) Rumination disorder
   e) Intussuception

9. A child is diagnosed to have restrictive pericardial effusion. The important clinical signs are the following:
   a) Tachycardia, hypotension, and decreased oxygen saturation
   b) Bradycardia, hypotension, and decreased perfusion
   c) Tachycardia, hypertension, and swelling of face
   d) Arrythmia, normal BP, and venous engorgement of neck
   e) Fever, tachycardia, and hypertension

10. The most common unintentional cause of death in children with epilepsy is:
    a) Drowning
    b) Motor vehicle accidents
    c) Medication overdose
    d) Head injury
    e) Pedestrian injury

11. The most recognized toxicity of halothane inhalation anesthetic agent is:
    a) Nephritis
    b) Pancreatitis
    c) Pneumonitis
    d) Myocarditis
    e) Hepatitis

12. A 26-week-gestational age preterm infant is placed on a mechanical ventilator. The infant is less responsive to stimulation. Head sonogram reveals a grade 2 intraventricular hemorrhage. The parents want to remove the baby from a ventilator and let him die. What should the doctor do in this situation?
    a) The physician should remove the infant from a mechanical ventilator.
    b) The physician should get a court order.
    c) The parents should get a court order.
    d) The physician should avoid the parents and continue patient's care.
    e) The physician should not remove the infant from a mechanical ventilator and arrange for a meeting with the parents and social worker.

13. All of the following methods can be used to prevent injuries from burn **except**:
    a) Crawling beneath smoke if indoors
    b) Practising escape procedures
    c) Wrapping with blanket
    d) Running if clothes catches fire
    e) Using materials for education

14. All of the following methods can be used to prevent fires **except**:
    a) Use flame retardant-treated clothing
    b) Stop cigarette smoking inside the house
    c) Use fire-matches-lighter
    d) Install smoke detectors
    e) Control of hot water thermostat (maximum temperature 128° F)

15. A physician wants to measure the clinical assessment of pain in a 5-year-old girl. All of the following pain measurement tools can be used **except**:
    a) Visual Analog Scale (VAS)
    b) Hormonal-metabolic measures
    c) Autonomic measures
    d) Faces scale
    e) Color and other analog scales

16. A physician wants to measure the clinical assessment of pain in a 3-year-old boy. All of the following pain measurement tools can be used **except**:
    a) Autonomic measures
    b) Behavioral scales
    c) Hormonal-metabolic measures

d) Wong-Baker faces scale
e) Combined behavior-physiological scales

17. A conscious child is on a mechanical ventilator. A physician wants to measure the clinical assessment of pain. The following pain measurement tool is useful in patients who are on a mechanical ventilator:
a) Behavioral scales
b) Hormonal-metabolic measures
c) Autonomic measures
d) Oucher faces scale
e) Behavioral-physiological measures

18. A child has congnitive limitations. All of the following pain measurements tools can be used **except**:
a) Autonomic measures
b) Visual Analog Scales
c) Hormonal-metabolic measures
d) Behavioral scales
e) Behavioral-physiological scales

19. A 3-month-old boy appears with hypoglycemic seizures. A physical examination reveals short stature, hepatomegaly, protruberant abdomen, and doll-like facies. The laboratory findings reveal hypoglycemia, lactic acidosis, hyperuricemia, and hyperlipidemia. The most likely enzyme deficiency is:
a) Glucose-6-phosphatase
b) Acid maltase
c) Galatose-1-phosphate uridyltransferase
d) Myophosphorylase
e) Fructokinase

20. A 4-month-old girl appears with hepatomegaly, massive cardiomegaly, pulmonary atelactasis with a secondary infection. ECG reveals prominent P waves, short P-R intervals, massive QRS voltages, biventricular hypertrophies, and intraventricular conduction delays. The most likely diagnosis is:
a) Endocardial cushion defect
b) Pompe disease
c) Myocarditis
d) Pericarditis
e) Pneumonia causing cardiac failure

21. The mode of inheritance in patients with Pompe disease (glycogenosis II) is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

22. The enzyme deficiency in patients with Pompe disease is:
a) Pyruvate dehydrogenase
b) Glucose-6-phosphate translocase
c) Liver phosphorylase
d) Glycogen synthetase
e) Acid maltase

23. The preferred diagnostic study in patients with Pompe disease is:
a) Renal biopsy
b) Muscle biopsy
c) Serum CK level
d) Acid maltase levels in WBCs
e) Serum acid maltase level

24. An infant is born with erythroblatosis fetalis. The infant may have the following finding:
    a) High insulin levels in serum
    b) Low insulin levels in serum
    c) High glucagon levels in serum
    d) Hyperglycemia
    e) High TSH levels in serum

25. Beckwith-Wiedemann syndrome has all of the following features **except**:
    a) Exomphalos
    b) Gigantism
    c) Visceromegaly
    d) Lateral earlobe fissure
    e) Macrocephaly

26. The patients with Beckwith-Wiedemann syndrome may develop all of the following tumors **except**:
    a) Retinoblastoma
    b) Wilms' tumor
    c) Adrenal carcinoma
    d) Hepatoblastoma
    e) Rhabdomyosarcoma

27. Beckwith-Wiedemann syndrome is due to the mutation in the following chromosome:
    a) Chromosome 7
    b) Chromosome 11
    c) Chromosome 13
    d) Chromosome 15
    e) Chromosome 17

28. A full term male infant appears jaundice during the first 24 hours of life due to 'AO' incompatibility and Coombs positive results. His serum bilirubin level is 35 mg/dL. A double-volume exchange transfusion is performed. The most likely morbidity is:
    a) Seizures
    b) Spastic diplegia
    c) Hydrocephalus
    d) Spastic quadriplegia
    e) Choreoathetotic cerebral palsy

**Match the following perinatal and neonatal illnesses and morbidities (29-33):**

29. Sensorineural hearing loss
30. Blindness
31. Paralysis-paresis
32. Spastic diplegia
33. Communicating hydrocephalus

    a) Intraventricular hemorrhage
    b) Periventricular leukomalacia
    c) Gentamicin
    d) Birth trauma
    e) Retinopathy of prematurity

34. All of the following conditions can cause poor speech **except**:
    a) Hearing deficit
    b) Immaturity
    c) Hyperoxia
    d) Chronic illness
    e) Prolonged endotracheal intubation

35. All of the following conditions can cause microcephaly **except**:
   a) Asymmetric SGA
   b) CMV
   c) Congenital rubella
   d) Congenital toxoplasmosis
   e) Hypoxic-ischemic encephalopathy

36. All of the following conditions can cause encephalopathy **except**:
   a) Herpes simplex virus
   b) Congenital toxoplasmosis
   c) Congenital rubella
   d) IVH
   e) Human immunodeficiency virus

37. An adolescent white girl appears for a routine annual physical examination. She is sexually active. All of the following tests are indicated **except**:
   a) Hematocrit
   b) Screening for sickle cell anemia
   c) Papanicolaou smears
   d) Testing for tuberculosis
   e) Routine urine analysis

38. A 16-year-old girl has anorexia nervosa. However, she is not very depressed. All of the following therapies are indicated in this patient **except**:
   a) Nutritional rehabilitation
   b) Individual psychotherapy
   c) Family psychotherapy
   d) Antidepressant drug
   e) Behavioral modification therapy

39. All of the following are clinical manifestations in female patients with anorexia nervosa (AN) **except**:
   a) Postural hypotension
   b) Malnutrition
   c) Menstrual irregularities
   d) Cardiac arrythmias
   e) Tachycardia

40. In patients with anorexia nervosa, daily weight gain should be about:
   a) 200-400 grams
   b) 400-600 grams
   c) 600-800 grams
   d) 800-1,000 grams
   e) 1,000-1,200 grams

41. All of the following are complications of rapid rehydration in patients with anorexia nervosa **except**:
   a) Hyperphosphatemia
   b) Congestive heart failure
   c) Pulmonary edema
   d) Tachypnea
   e) Death

42. A patient with anorexia nervosa abused ipecac for induced vomiting. The patient may develop the following complication due to the abuse of ipecac:
   a) Mitral valve stenosis
   b) Aortic stenosis
   c) Endocarditis
   d) Myocarditis
   e) Mitral valve prolapse

43. The following chromosome is involved in patients with CATCH 22 syndrome:
    - a) Chromosome 12
    - b) Chromosome 15
    - c) Chromosome 21
    - d) Chromosome 22
    - e) Chromosome X

44. All of the following features are present in patients with CATCH 22 syndrome **except**:
    - a) Cardiac
    - b) Abnormal facies
    - c) Thymic hypoplasia
    - d) Hypocalcemia
    - e) Cleft lip

45. A routine CBC result in a healthy newborn reveals the total lymphocyte count is 1950/mm$^3$. The most likely diagnosis is:
    - a) Normal
    - b) Congenital CMV infection
    - c) Congenital herpes infection
    - d) Parvovirus infection
    - e) Severe combined immunodeficiency (SCID)

46. A 5-month-old boy appears with respiratory distress for the last 24 hours. He had two episodes of pneumonia and four episodes of otitis media and six episodes of diarrhea. He is delayed for his growth and development. A physical examination reveals bilateral rales and right otitis media. All of the following findings are true for this patient **except**:
    - a) Total CBC lymphocyte counts are 1600/mm$^3$.
    - b) Chest x-ray reveals bilateral infiltrates.
    - c) Blood culture is positive for Streptococcus pneumoniae.
    - d) Serum immunoglobulin levels are elevated.
    - e) Conductive hearing loss in the right ear.

47. All of the following are features of CHILD syndrome **except**:
    - a) Congenital hemidysplasia
    - b) Limb defects
    - c) Ichthyosiform erythroderma
    - d) Facial exfoliative erythematous dermatitis
    - e) Unilateral hypomelia ipsilateral to the dermatosis

48. The mode of inheritance in patients with CHILD syndrome is:
    - a) Autosomal recessive
    - b) X-linked recessive
    - c) Autosomal dominant
    - d) X-linked dominant
    - e) Multifactorial

**Match the following diseases with enzyme defects (49-53):**

49. Niemann-Pick type I
50. Gaucher disease
51. Metachromatic leukodystrophy
52. GM1 gangliosidosis
53. GM2 gangliosidosis

- a) Arylsulfatase A
- b) Beta-galactosidase
- c) Sphingomyelinase
- d) Beta-hexosaminidases A and B
- e) Glucocerebrosidase

**Match the following porphyrias with different clinical manifestations (54-58):**

54. Acute intermittent porphyria
55. Congenital erythropoietic porphyria
56. Porphyria cutanea tarda
57. Hepatoerythropoietic porphyria
58. Erythropoietic protoporphyria

a) Erythema, edema, itching, burning sensation, and scarring vesicles
b) Abdominal pain, diarrhea, vomiting, constipation, ileus, dysuria, muscular hypotonia, sensory neuropathy, seizure, and respiratory failure
c) Pink to brown staining urine, bullae, crusts, scar formations, hypopigmentation, hyperpigmentation, sclerodermoid lesions, alopecia, hypertrichosis, splenomegaly, hemolytic anemia, and erythrodontia
d) Bullae on the sun-exposed areas of the skin, particularly the dorsa of the hands, skin fragility, crusts, scar formations, sclerodermoid lesions, hyperpigmentation, hypopigmentation, and hypertrichosis
e) Pink urine, bullae, crusts, scar formation, sclerodermoid lesions, hypopigmentation, hyperpigmentation, and hypertrichosis

59. A child appears with burning sensations on the face and distal part of the hands within an hour exposure to the Sun. He also complains of occasional upper abdominal pain. A physical examination reveals normal skin and mild tenderness in the right upper quadrant. Abdominal sonogram reveals gallstones. The next step in management:
a) Psychiatric consultation
b) Beta-carotene
c) Upper GI series
d) Duodenoscopy
e) Observation and follow-up after 1 month

60. The brain metabolism mostly uses the following substrate:
a) Galactose
b) Fructose
c) Fatty acids
d) Amino acids
e) Glucose

61. The major, long-term outcome of severe, prolonged hypoglycemia in infants is:
a) Growth retardation
b) Microcephaly
c) Cerebral atrophy
d) Mental retardation
e) Periventricular leukomalacia

62. The glucose level normally reaches nadir in newborn infants:
a) 15-30 minutes after birth
b) 30-60 minutes after birth
c) 1-3 hours after birth
d) 3-5 hours after birth
e) 5-8 hours after birth

63. A poorly controlled diabetic mother with vascular disease delivered the newborn at 38-week-gestational age. A physical examination most likely reveals:
a) Macrosomia
b) Macrocephaly
c) Hepatomegaly
d) Large for gestational age
e) Small for gestational age

64. A 15-year-old girl appears for a routine physical examination. A 35-year-old male physician is going to examine her. She came with her mother. The following condition should be maintained during a physical examination:
a) The room should have very bright light.
b) The pelvic examination should be performed very gently.

c) The patient should lie down during breasts examination.
d) The physician should be very friendly during a physical examination.
e) A chaperone should be present during a physical examination.

**Match the following drugs and major metabolites (65-69):**

65. Heroin
66. Cocaine
67. Alcohol
68. Cannabinoids
69. Methaqualone

a) Acetaldehyde
b) Morphine
c) Benzoyl ecgonine
d) Carboxy-and hydroxymetabolites
e) Hydroxylated metabolites

**Match the following clinical manifestations and drugs (70-74):**

70. Euphoria, pinpoint pupils, hypothermia, respiratory depression, and pulmonary edema
71. Hypertension, hyperpyrexia, seizures, psychotic ideation, sudden violence, and ventricular irritability
72. Dizziness, dilated pupils, fever, flushing, tachycardia, and sensation of synesthesia or "seeing" smells and "hearing" colors
73. Headaches, syncope, lightheadedness, severe hypotension, cutaneous flushing followed by vasoconstriction, and tachycardia
74. Euphoria, jaw clenching, blurred vision, teeth grinding, anxiety, panic attacks, psychosis, hyperthermia after vigorous dancing at a "rave".

a) Lysergic acid diethylamide
b) Amphetamines
c) Methylenedioxymethamphetamine
d) Opiates
e) Volatile substance

**Match the following disorders with functional deficiencies (75-79):**

75. Wiskott-Aldrich syndrome
76. Ataxia-telangiectasia
77. Cartilage-hair hypoplasia
78. Major histocompatibility complex class II antigen deficiency
79. Lymphoproliferative syndrome

a) Low immunoglobulins, CD4 deficiency, and lack of T-cell responses to antigens
b) Thrombocytopenia, T-cell deficiency, and poor antipolysaccharide antibody production
c) Combined B- and T-cell defects of varying severity
d) Selective IgA deficiency and T-cell deficiency
e) Poor T-cell responses, autoimmunity, impaired apoptosis (programmed cell death), and increased bcl-2

80. A child has partial DiGeorge syndrome. All of the following features are present **except**:
    a) Mild hypoplasia of thymus
    b) Otitis media
    c) P. carinii pneumonia
    d) Normal growth
    e) Mild hypoplasia of parathyroid glands

81. All of the following are complications of chronic systemic use of corticosteroids **except**:
    a) Growth suppression
    b) Hyperglycemia
    c) Delayed sexual maturation

d) Diabetes mellitus
e) Hyperkalemia

82. The most common hypersensitivity reaction of eyes is:
a) Contact allergy
b) Atopic keratoconjunctivitis
c) Giant papillary conjunctivitis
d) Allergic conjunctivitis
e) Vernal keratoconjunctivitis

83. The major causes of death in patients with SLE include all of the following **except**:
a) Nephritis
b) Myocardial infarction
c) CNS disease
d) Intestinal bleeding
e) Infection

84. Myocardial infarction in patients with SLE may be due to:
a) Coronary artery abnormalities
b) Endocardial thickening
c) Pericardiac thickening
d) Aortic root thickening
e) Chronic use of corticosteroids

85. The most common inflammatory myopathy in pediatric age group is:
a) Juvenile dermatomyositis
b) SLE
c) Scleroderma
d) Sjogren syndrome
e) Behcet disease

86. A 9-year-old girls appears with fatigue, irritability, low-grade fever, arthralgia, abdominal pain, weight loss, and rash. A physical examination reveals erythema over the malar areas and bridge of the nose. She also has violaceous (heliotropic) discoloration of the upper eyelids and mild facial edema. All of the following laboratory findings are present in this patient **except**:
a) Coombs-positive anemia
b) Presence of antinuclear antibody
c) Absence of antibodies to DNA
d) Negative rheumatoid factor
e) Elevated serum creatine kinase

87. All of the clinical manifestations are more frequently present in patients with juvenile dermatomyositis **except**:
a) Gottron papules
b) Heliotrope eyelids
c) Gower sign
d) Retinitis
e) Avascular nailfold capillaries, dropout of capillary end-loops, and terminal bush formation.

88. The following laboratory finding is absent in patients with juvenile dermatomyositis:
a) Elevated ESR (erythrocyte sedimentation rate)
b) Elevated lactic acid dehydrogenase
c) Negative antibodies to SSA
d) Elevated CD4: CD8 ratio
e) Elevated levels of von Willebrand factor antigen

89. The therapy in patients with juvenile dermatomyositis includes all of the following **except**:
a) Bed rest
b) Refer to pediatric rheumatologist
c) Corticosteroids

d) Intravenous immunoglobulins
e) Sunscreen

90. A child appears with febrile episodes. The fever is characterized by febrile periods and normal temperature between febrile illnesses. The most likely the child has:
a) Remittent fever
b) Relapsing fever
c) Biphasic fever
d) Periodic fever
e) Intermittent fever

**Match the diseases with different types of fever (91-95):**

91. Hypothalamic disorder
92. Malaria causes by Plasmodium vivax
93. Poliomyelitis
94. Cyclic neutropenia
95. Malaria caused by Plasmodium malariae

a) Biphasic fever
b) Central fever
c) Periodic fever
d) Quartan fever
e) Tertian fever

**Match the diseases with different clinical manifestations (96-100):**

96. E. coli bacteremia
97. Drug fever
98. Dengue fever
99. Apthous stomatitis
100. Borrelia recurrentis infections

a) Relative bradycardia
b) Relative tachycardia
c) Biphasic fever
d) Relapsing fever
e) Periodic fever

101. All of the following are primary signs and symptoms of sepsis **except**:
a) Hypotension
b) Tachypnea
c) Shaking chills
d) Fever
e) Hypothermia

102. The definitive diagnostic test in patients with septic shock is:
a) Leukocytosis
b) Leukocytopenia
c) Prolonged PTT
d) High CSF cell counts
e) Positive blood cultures

103. A 2-year-old boy is admitted in pediatric intensive care unit with septic shock. He appears in the ER with tachypnea, fever, and lethargy. A physical examination reveals purpura fulminans, cyanosis, nasal flaring, and intercostal retractions. Vital signs reveal hypotension, tachycardia, hyperthermia, and tachypnea. The boy received 100% oxygen by mask immediately. All the blood work, urine, and CSF specimens are obtained. The chest x-ray is performed. The therapy for septic shock includes all of the following **except**:
a) A third-generation cephalosporin (e.g., ceftriaxone or cefotaxime) and aminoglycoside should be given.

b) Intravenous fluid therapy (e.g., normal saline, Ringer's solution) 20 mL/kg should be given immediately.
c) Continue to give 100% oxygen by face mask.
d) The patients with DIC should receive fresh frozen plasma, cryoprecipitates, and platelets.
e) Inotropic agents (e.g., dopamine, epinephrine) can be used in persistent hypotension.

104. The ominous laboratory finding of overwhelming sepsis is:
a) Elevated neutrophil counts
b) Increased band counts
c) Vacuolation of neutrophils
d) Toxic granulations
e) Neutropenia

105. The laboratory findings of sepsis include all of the following **except**:
a) Metabolic alkalosis
b) Thrombocytopenia
c) Anemia
d) Hypoxia
e) Hypercarbia

106. All of the following are common complications of group A Streptococcal pharyngitis when the treatment is inadequate or not provided **except**:
a) Peritonsillar abscess
b) Retropharyngeal abscess
c) Cervical lymphadenitis
d) Otitis media
e) Pneumonia

**Match the following diseases that occurs due to complications of group A Streptococcal infections (107-108):**

107. Acute glomerulonephritis
108. Acute rheumatic fever

a) Group A Streptococcal skin infection
b) Group A Streptococcal upper respiratory tract infection
c) All of the above
d) None of the above
e) Unknown

109. A child has poststreptococcal reactive arthritis. All of the following statements are true about this condition **except**:
a) Usually involves the smaller joints.
b) The latent period between the group A Streptococcal pharyngitis and subsequent reactive arthritis is usually shorter (i.e., less than 10 days).
c) Usually does not respond dramatically to therapy with aspirin or other NSAIDs.
d) All patients have serologic evidence of group A Streptococcal infection.
e) About 50% of patients have positive throat culture for group A Streptococcal infection.

110. A child appears for a routine physical examination. He was diagnosed with poststreptococcal reactive arthritis about 1 month ago. The child should be watched for the following complication:
a) Cholecystitis
b) Pancreatitis
c) Hepatitis
d) Encephalitis
e) Carditis

111. The Ekiri syndrome occurs due to the complication of the following infection:
a) E. coli
b) Pseudomonas aeruginosa
c) Staphylococcus aureus

d) Shigella
e) Salmonella

112. The most common complication of Shigella infection is:
a) Hypoglycemia
b) Protein loosing enteropathy
c) Sepsis
d) Dehydration
e) Inappropriate secretion of ADH

113. All of the following clinical manifestations are due to the complications of Shigella dysenteriae infections **except**:
a) Hemolytic-uremic syndrome
b) Rectal prolapse
c) Toxic megacolon
d) Blood-tinged vaginal discharge
e) Inappropriate secretion of ADH

114. A child has hemolytic-uremic syndrome (HUS). This syndrome can be produced by all of the following organisms **except**:
a) E. coli 0157 : H7
b) E. coli 0111 : NM
c) E. coli 026 : H11
d) Shigella sonnei
e) Shigella dysenteriae serotype 1

115. Bacteremia is more common in the following serotype of Shigella:
a) S. flexneri
b) S. boydii
c) S. sonnei
d) S. dysenteriae serotype 1
e) S. dysenteriae serotype 2

116. The American Academy of Pediatrics recommends the following supplementation for children between 6 months and 2 years of age who are hospitalized for measles or complications and for children older than 6 months of age with measles and immunodeficiency:
a) Iron
b) Folic acid
c) Vitamin A
d) Vitamin D
e) Calcium

117. All of the following clinical manifestations are due to the complications of measles **except**:
a) Otitis media
b) Pneumonia
c) Guillain-Barre syndrome
d) Cerebral bleeding
e) Encephalomyelitis

118. Hecht giant cell pneumonia occurs due to the following organism:
a) Rubella
b) Mumps
c) Herpes simplex virus
d) Varicella zoster virus
e) Measles

119. The best approach to prevent firearm injuries in children and adolescents is:
a) Counselling families and adolescents
b) Gun should be kept in a locked container
c) Gun should have a trigger lock.

  d) Remove the firearm from the environment of children and adolescents.
  e) Reading educational materials about the guns obtained from the American Academy of Pediatrics.

120. Most homicides due to firearm injuries are:
  a) Acts of robbery
  b) Acts of friendly fire
  c) Acts of rage
  d) Acts of routine practice
  e) Acts of routine hunting

121. Most of the body calcium is present in bones in the form of:
  a) Carbonate
  b) Bicarbonate
  c) Gluconate
  d) Oxalate
  e) Hydroxyapatite

122. The ionized or free calcium in serum is:
  a) Slightly less than 10% of the total serum calcium
  b) Slightly less than 25% of the total serum calcium
  c) Slightly less than 50% of the total serum calcium
  d) Slightly less than 60% of the total serum calcium
  e) Slightly less than 70% of the total serum calcium

123. All of the following statements are true about serum calcium levels in different clinical conditions **except**:
  a) A low total serum calcium concentration may be normal in patients with significant hypoalbuminemia.
  b) In metabolic acidosis, less calcium is bound to albumin, more free or ionized calcium is present in serum.
  c) In metabolic alkalosis, less calcium is bound to albumin, more free or ionized calcium is present in serum.
  d) Each 1 gram/dL of albumin in serum binds with 0.8 mg/dL of calcium.
  e) Serum ionized calcium concentration should be obtained in patients who are very ill, have low serum albumin levels, or clinical suspicion of abnormal ionized calcium level.

**Match the following clinical manifestations with vitamin deficiencies and toxicities (124-128):**

124. Vitamin A toxicity
125. Vitamin A deficiency
126. Vitamin $B_1$ deficiency
127. Vitamin B2 deficiency
128. Foliacin deficiency

  a) Beriberi
  b) Increased intracranial pressure
  c) Ariboflavinosis
  d) Megaloblastic anemia
  e) Nyctalopia

129. A 10-day-old boy appears with hard nodules with overlying erythematous skin over the cheeks, thighs, buttocks, and back for the last 2 days. The boy was born by forcep delivery with Apgar scores were 3 and 6 at 1 and 5 minutes respectively. He is drinking infant formulas 2 ounces every 4 hours. His birth weight was 9 lbs. The laboratory finding should reveal:
  a) Hypocalcemia
  b) Hyponatremia
  c) Hyperkalemia
  d) Hypercalcemia
  e) Pseudomonas aeruginosa bacteremia

130. A 2-year-old girl appears for brief developmental assessment. All of the following tests can be performed **except**:
  a) Early screening inventory
  b) Denver-II
  c) Early language milestone scale (ELM)

d) Clinical adaptive test (CAT)
e) Age and stages questionnaires (ASQ)

131. A 7-year-old boy needs developmental assessment. The following test is appropriate for this age:
a) Parents evaluation of developmental status
b) Denver-II
c) Early screening inventory
d) Clinical linguistic and auditory milestones scale (CLAMS)
e) Early language milestone scale (ELM)

132. A 15-month-boy girl appears with history of breath holding for the last 1 month. The preferred method of therapy is:
a) Hug the child
b) Give whatever she demands
c) Ignore the behavior
d) Give toys immediately
e) Mouth-to-mouth resuscitation

133. A 17-month old boy appears in the ER with history of first episode of generalized seizure that lasted 30 seconds. The boy had breath holding spell followed by loss of consciousness and seizure activity. The risk of later developing seizure disorder is about:
a) 0%
b) 25%
c) 50%
d) 66%
e) 75%

134. A 2-year-old boy is lying frequently to his parents to handle conflict and reduce anxiety. His parents are very sensitive and supportive to him. The preferred initial method to manage the situation is:
a) Parents should not allow him to watch TV until he stops lying.
b) Parents should confront the child to give clear message that lying is not acceptable.
c) Parents should ignore the lying completely.
d) Parents should take it seriously if the lying is about serious matter only
e) Parents should use time-out and confined him in his room for about 2 hours.

135. A 4-year-old boy has high level of aggressive behavior. The most likely outcome of this boy in adolescence:
a) He will remain aggressive, especially without family-focused intervention
b) He will become normal adolescent without any intervention.
c) He will most likely become murderer.
d) He will most likely end up in jail.
e) He will most likely use illegal drugs.

136. All of the following behaviors may be developmentally appropriate **except**:
a) Lying
b) Stealing
c) Temper tantrums
d) Breath holding
e) Truancy

137. A 2-year-old boy appears with history of many episodes of temper tantrums for the last 2 months. His mother usually gets angry and frustrated. The preferred method to manage temper tantrums is:
a) The mother should turn away briefly from the child during the episode of temper tantrum.
b) The mother should stop the temper tantrum immediately by force.
c) The mother should lock the child in his bedroom for 2 hours.
d) The mother should not allow him to watch TV for 4 hours after each episode of temper tantrum.
e) The mother should not give food for at least 6 hours after each temper tantrum episode.

138. A 19-month-old girl appears with pain, pseudoparalysis, and edema of the legs. She has digestive disturbances, loss of appetite, and irritability. A physical examination reveals frogleg position with the hips and knees semiflexed with outward rotation of the feet. The x-ray of the lower end of femur and the upper end of tibia reveals zone of rarefaction under the white line at the metaphysis. The lateral parts of the zone of rarefaction appear as triangular defect. The most likely diagnosis is:

a) Nutritional rickets
b) Hypervitaminosis D
c) Child abuse with fracture
d) Scurvy
e) Vitamin D deficiency rickets

139. The most frequent trisomy in humans is:
a) Trisomy 8
b) Trisomy 13
c) Trisomy 16
d) Trisomy 18
e) Trisomy 21

140. A newborn appear with the midline cleft lip and cleft palate, microcephaly, hypotelorism, microopthalmos, bulbous nose, and midline scalp defect. The most likely diagnosis is:
a) Trisomy 18
b) Trisomy 13
c) Trisomy 9
d) Trisomy 16
e) Trisomy 21

141. All of the following syndromes have chromosomal breakage **except**:
a) Klinefelter syndrome
b) Fanconi anemia
c) Bloom syndrome
d) Werner syndrome
e) Nijmegen syndrome

142. The most common heritable form of mental retardation in males is:
a) Down syndrome
b) Williams syndrome
c) Klinefelter syndrome
d) Turner syndrome
e) Fragile X syndrome

**Match the following syndromes with the clinical manifestations (143-147):**

143. Williams syndrome
144. Prader-Willi syndrome
145. Alagille syndrome
146. Rubinstein-Taybi syndrome
147. Angelman syndrome

a) Bile duct paucity with cholestasis
b) Uncontrollable bouts of laughter and seizures
c) Hypotonia, hypogonadism, and obesity
d) Supravalvular aortic stenosis
e) Broad thumbs and toes

**Match the following syndromes with the clinical manifestations (148-152):**

148. WAGR syndrome
149. Smith-Magenis syndrome
150. Alagille syndrome
151. Miller-Dieker syndrome
152. Velocardiofacial-DiGeorge syndrome

a) Brachycephaly
b) Aniridia

c) Conotruncal cardiac defects
d) Pulmonary artery stenosis
e) Microcephaly

153. A 2-day-old male newborn infant appears with vomiting, tachypnea, lethargy, and convulsion. He was born by NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. A physical examination reveals mild hepatosplenomegaly. A sepsis work up is performed. The boy is receiving ampicillin, gentamicin, and phenobarbital. The laboratory studies reveal normal arterial blood gas and serum electrolytes. The serum ammonia level is 1,050 μM. All of the following enzyme deficiencies can produce hyperammonemia **except**:
a) Carbamyl phosphate synthetase
b) Glycine cleavage enzyme
c) Ornithine transcarbamylase
d) Arginosuccinate synthetase
e) N-Acetylglutamate synthetase

154. The therapy for hyperammonemia in infants includes all of the following **except**:
a) High protein therapy intravenously.
b) Give adequate calories, fluid, and electrolytes intravenously.
c) Sodium benzoate
d) Sodium phenylacetate
e) Arginine hydrochloride

155. A 3-day-old preterm female infant appears sudden onset of respiratory distress. Her condition worsens despite antibiotics (ampicillin and gentamicin) and ventilator therapies. The blood tests reveal elevated citrulline, alanine, glutamine, and ammonia (3,500 μM) levels. All of the following statements are true about this condition **except**:
a) The cause is carbamyl phosphate synthetase deficiency.
b) The therapy for hyperammonemia should be started as soon as possible.
c) The patient recovers without sequelae.
d) Hyperammonemia does not recur with normal protein diet.
e) The therapy for hyperammonemia should be continued vigorously.

156. A male child appears with night blindness, icthyosis, and peripheral neuropathy. He has Refsum disease. The preferred therapy is:
a) Phytanic acid-restricted diet
b) Carboxylic acid-restricted diet
c) Pristanic acid-restricted diet
d) Citric acid-restricted diet
e) Bile acid-enriched diet

157. The enzyme deficiency in patients with classic Refsum disease is:
a) Acyl-CoA oxidase
b) 2-Methyl acyl CoA oxidase
c) Phytanoyl-CoA
d) D-bifunctional protein
e) Very long chain fatty acids

158. At birth, the eyes of all newborn infants should be protected against gonococcal infection by instilling:
a) 0.5% erythromycin ointment
b) 1% erythromycin ointment
c) 0.5% silver nitrate drops
d) 2.5% povidone-iodine solution
e) 1% silver nitrate drops

159. Apgar evaluations of newborn infants include all of the following **except**:
a) Color
b) Heart rate
c) Muscle strength
d) Respiratory effort
e) Response to catheter in nostril tested after oropharynx is clear.

160. A full term female newborn is delivered by NSVD. Her heart rate 110 per minute. She is pale and blue. She is limp. She has no respiratory effort. She has no response to catheter in nostril (tested after oropharynx is clear). Apgar score is:
   a) 1
   b) 2
   c) 3
   d) 4
   e) 5

161. All of the following conditions can give false-positive findings in Apgar evaluations **except**:
   a) Magnesium sulfate
   b) Immaturity
   c) Maternal acidosis
   d) Acute cerebral injury
   e) Morphine

162. All of the following conditions reduce the effects of maternal drugs on fetus **except**:
   a) Drugs composed large molecules
   b) Drugs that are strong acids
   c) Drugs that are plasma bound
   d) Poorly absorbed from maternal GI tract
   e) Poorly absorbed from newborns GI tract

163. Breast feedings are contraindicated in the USA in all of the following conditions **except**:
   a) HIV
   b) HTLV-1
   c) HTLV-2
   d) CMV (preterm infants)
   e) CMV (term infants)

164. All of the following organisms are present in the breast milk and therefore, cause infections to newborn infants **except**:
   a) CMV
   b) HTLV-1
   c) HTLV-2
   d) HIV
   e) Mycobacterium tuberculosis

165. All of the following drugs are contraindicated in breast feeding **except**:
   a) Aldomet
   b) Nicotine
   c) Cocaine
   d) Heroin
   e) Cimetidine

166. The following category drugs are contraindicated during pregnancy:
   a) Category A
   b) Category B
   c) Category C
   d) Category D
   e) Category X

**Match the following drugs and their teratogenic effects (167-171):**

167. Phenytoin
168. Warfarin
169. Propylthiouracil
170. Accutane
171. Lithium

a) Hypothyroidism
b) Hypoplastic nasal structures
c) Neuroblastoma
d) Facial-ear defects
e) Ebstein's anomaly

**Match the followings drugs and their mechanism of teratogenic effects (172-173):**

172. Warfarin
173. Phenytoin

a) Prevents the carboxylation of gamma-carboxyglutamic acid
b) Deficiency of epoxide hydrolase

**Match the following fetal conditions and fetal therapies (174-178):**

174. 21-hydroxylase deficiency
175. Bartter syndrome
176. Isoimmune thrombocytopenia
177. Supraventricular tachycardia
178. Methylmalonic acidemia

a) Indomethacin to the mother
b) Intravenous immunoglobulin to the mother
c) Flecainide to the mother
d) Vitamin $B_{12}$
e) Dexamethasone to the mother

**Match the following drugs and their side effects (179-183):**

179. Sulfisoxazole
180. Furosemide
181. Erythromycin
182. Indomethacin
183. Fentanyl

a) Nephrocalcinosis
b) Kernicterus
c) Intestinal perforation
d) Seizures
e) Pyloric stenosis

**Match the following congenital anomalies and clinical manifestations (184-188):**

184. Choanal atresia
185. Potter syndrome
186. VATER syndrome
187. Pierre Robin syndrome
188. Diaphragmatic hernia

a) Aspiration pneumonia
b) Regurgitation of milk through the nose
c) Scaphoid abdomen
d) Unable to pass urine
e) Baby is blue when stops crying and becomes pink when starts crying.

189. The most common site of spinal cord injury in newborns with cephalic presentation is:
a) C1
b) C2

c) C3
d) C4
e) C7

190. The most common sites of spinal cord injuries in newborns with breech presentation are:
a) C1-C2
b) C3-C4
c) C5-C6
d) C7-T1
e) T2-T3

191. A newborn appears with asymmetric facial features. The right eye cannot be closed, right side of the forehead is smooth, right nasolabial fold is absent, and right corner of the mouth drops. He was born by forcep-assisted vaginal delivery. The most likely diagnosis is:
a) Absence of depressor anguli oris muscle
b) Nuclear agenesis of the facial nerve
c) Left facial nerve palsy
d) Right sixth cranial nerve palsy
e) Right peripheral facial nerve palsy

**Match the intrauterine infections with the following findings (192-196):**

192. CMV
193. Toxoplasmosis
194. Herpes simplex virus
195. Rubella
196. Syphilis

a) Cataracts
b) Ganciclovir therapy may be effective
c) Life-threatening illness
d) Organism is not resistant to penicillin therapy.
e) Transmitted through cat feces or undercooked meat or raw vegetables

197. A 4-day-old full term infant appears with poor feeding, lethargy, pallor, jaundice, tachypnea, and tachycardia. She was born by vaginal delivery with breech presentation. Her Apgar scores were 2 and 8 at 1 and 5 minutes respectively. She is A(+), Coombs (-ve). Her mother is O(+). A physical examination reveals bluish discoloration and palpable mass in right upper quadrant. The most likely diagnosis is:
a) Hemolytic jaundice (AO set up)
b) Congenital spherocytosis
c) G6PD deficiency
d) Ruptured duodenum
e) Subcapsular hematoma of the liver

198. A 29-week-gestational age preterm infant appears with cessation of breathing for longer than 20 seconds, cyanosis, and sinus bradycardia. The initial therapy includes all of the following **except**:
a) Bag and mask ventilation
b) Oxygen
c) Aminophylline
d) Gentle cutaneous stimulation
e) Antireflux medication

199. A 10-day-old male infant appears with kernicterus. All of the following clinical manifestations are present **except**:
a) Hypotonia
b) Stupor
c) Poor suck
d) Seizures
e) Opisthotonos

200. A 2-week-old female infant appears with jaundice. She was born in another institution. She is A(+)ve and Coombs(-)ve. Her mother is O(+)ve. The differential diagnosis includes all of the following **except**:
   a) Biliary atresia
   b) Neonatal hepatitis
   c) Galactosemia
   d) Hypothyroidism
   e) Hemolytic jaundice due to 'AO' incompatibility

201. According to American Academy of Pediatrics all of the following conditions are preventable causes of kernicterus **except**:
   a) Lack of parenteral concern regarding the presence of jaundice.
   b) Early discharge (less than 48 hours) was done but no early follow-up (within 48 hours of discharge) was arranged.
   c) Failure to obtain serum bilirubin levels in newborns who appear jaundice during the first 24 hours.
   d) Lack of clinical experience to recognize the jaundice.
   e) Lack of concern regarding the presence of jaundice in newborn infants.

202. A 16-hour-old male newborn appears with jaundice. His serum total bilirubin level is 18 mg/dL. His blood type is B(+)ve and Coombs positive. His mother's blood type is O(+)ve. The double phototherapy is started. Double volume exchange transfusion should be initiated when the serum indirect bilirubin level is:
   a) 19 mg/dL
   b) 20 mg/dL
   c) 22 mg/dL
   d) 24 mg/dL
   e) 25 mg/dL

203. Double volume exchange transfusions are performed in patients with severe hyperbilirubinemia secondary to hemolytic disease. The composition of blood used in this procedure should be about:
   a) 15% packed-RBCs and 85% plasma
   b) 25% packed-RBCs and 75% plasma
   c) 33% packed-RBCs and 67% plasma
   d) 50% packed-RBCs and 50% plasma
   e) 66% packed-RBCs and 34% plasma

204. During phototherapy, photo-isomerization predominantly converts bilirubin:
   a) From 4Z, 15E to 4Z, 15Z
   b) From 4Z, 15Z to 4Z, 15E
   c) From 4E, 15Z to 4Z, 15Z
   d) From 4E, 15E to 4Z, 15E
   e) From 4E, 15Z to 4E, 15Z

205. All of the following are common complications of phototherapy **except**:
   a) Loose stools
   b) Overheating
   c) Erythematous maculopapular rash
   d) Eye injury
   e) Dehydration

206. All of the following conditions can cause hemolytic disease of the newborn (or erythroblastosis fetalis) **except**:
   a) D antigens of the Rh group
   b) ABO incompatibility
   c) C antigens of the RBCs
   d) E antigens of RBCs
   e) Anti-Lewis antibodies

207. The majority of the patients with ataxia-telangiectasia have the following clinical manifestation besides cerebellar ataxia and oculocutaneous telangiectasias:
   a) Adenocarcinomas
   b) Recurrent sinopulmonary infections
   c) Varicella

d) Otitis media
e) Lymphoreticular type malignancy

208. The most common type of malignancy in patients with ataxia-telangiectasia is:
a) Cerebellar tumor
b) Pituitary tumor
c) Hemangiosarcomas
d) Neurofibrosarcomas
e) Lymphoreticular type

209. The mode of inheritance in patients with Wiskott-Aldrich syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

210. The laboratory findings in patients with Wiskott-Aldrich syndrome includes all of the following **except**:
a) Elevated serum level of IgM
b) Elevated serum level of IgA
c) Elevated serum level of IgE
d) Normal or slightly low IgG level
e) Moderately reduced percentages of T cells

211. The most common associated finding in patients with chronic asthma and/or pneumonia is:
a) Mental retardation
b) Cerebral palsy
c) Allergy
d) Tracheoesophageal fistula (H-type)
e) Gastroesophageal reflux

212. The most common cause of bronchiectasis in the developed countries is:
a) Cystic fibrosis
b) Ciliary dyskinesia
c) TB
d) Measles
e) Right middle lobe syndrome

213. The preferred diagnostic study in patients with bronchiectasis is:
a) Chest x-ray (AP view)
b) Bronchoscopy
c) Chest x-ray (lateral view)
d) Bronchography
e) CT scan

214. The most common combination of pathogens causing pneumonia is:
a) RSV and Mycoplasma pneumoniae
b) RSV and Chlamydia trachomatis
c) Streptococcus pneumonia and S. aureus
d) Streptococcus pneumonia and C. trachomatis
e) Streptococcus pneumonia and RSV

215. The most common causes of empyema are:
a) S. aureus and S. pneumoniae
b) S. aureus and Pseudomonas aeruginosa
c) S. pneumoniae and RSV
d) S. pneumoniae and Mycoplasma pneumoniae
e) S. pneumoniae and Chlamydia trachomatis

216. The top five most common clinical manifestations in patients with cystic fibrosis are the following **except**:
   a) Acute or persistent respiratory symptoms
   b) Failure to thrive (or malnutrition)
   c) Abnormal stools
   d) Meconium ileus
   e) Nasal polyps

217. The parents noticed salty taste when they kiss the child. The most likely diagnosis is:
   a) Facial eczema
   b) Acrodermatitis enteropathica
   c) SLE
   d) Cystic fibrosis
   e) Ectodermal dysplasia

218. The diagnostic criteria in patients with cystic fibrosis (CF) include all of the following **except**:
   a) Presence of typical clinical manifestations and two elevated sweat chloride concentrations (60 mEq/L or more) performed on separate days
   b) A history of cystic fibrosis in a sibling and identification of two CF mutations
   c) A positive newborn screening test and two elevated sweat chloride concentrations performed on separate days
   d) A history of CF in a sibling and an abnormal nasal potential difference measurement
   e) A history of CF in a sibling and positive newborn screening test

219. The following statement is **not** true in patients with cystic fibrosis:
   a) Sexual development is often delayed.
   b) Sexual function is usually impaired.
   c) Majority of males are azoospermic.
   d) Female fertility rate is reduced.
   e) Females may have cervicitis and accumulation of tenacious mucus in the cervical canal.

220. All of the following complications are due to use of aminoglycosides in patients with cystic fibrosis **except**:
   a) Hypomagnesemia
   b) Hyperuricemia
   c) Hearing loss
   d) Vestibular dysfunction
   e) Renal tubular dysfunction

221. A child has cystic fibrosis. The PFTs (pulmonary function tests) are not performed until:
   a) 1-2 years of age
   b) 3-4 years of age
   c) 5-6 years of age
   d) 7-8 years of age
   e) 9-10 years of age

222. The following statement is not true about pulmonary function tests in patients with cystic fibrosis:
   a) Restrictive lung changes occur early in the disease process.
   b) Obstructive lung changes typically present by 5-6 years of age.
   c) Small airway obstruction is manifested early by decrease in mid-maximal flow rate
   d) Residual volume and functional residual capacity are increased early in the course of the disease.
   e) Presence of an obstructive lung disease and modest response to bronchodilator are diagnostic of cystic fibrosis.

223. The presence of the following organisms on culture of lower airways or sputum is diagnostic of cystic fibrosis in children:
   a) Streptococcus pneumoniae
   b) Mucoid forms of Pseudomonas
   c) Mycoplasma pneumoniae
   d) RSV
   e) Chlamydia trachomatis

**Match the following therapies and their complications in patients with cystic fibrosis (224-228):**

224. Spironolactone
225. Corticosteroids
226. Ibuprofen
227. Semisynthetic penicillins
228. Iodine-containing expectorants

a) Interstitial nephritis
b) Gynecomastia
c) Goiter
d) Gastrointestinal bleeding
e) Hyperglycemia

**Match the following syndromes and different cardiac defects (229-233):**

229. Asplenia syndrome
230. Polysplenia syndrome
231. Mulibery nanism
232. Fragile X syndrome
233. PHACE syndrome

a) Pericardial thickening
b) Mitral valve prolapse
c) VSD
d) Increased pulmonary blood flow
e) Complex cyanotic heart lesions with decreased pulmonary blood flow

**Match the following syndromes and chromosomal defects (234-238):**

234. Williams syndrome
235. Alagille syndrome
236. Noonan syndrome
237. Marfan syndrome
238. Char syndrome

a) Chromosome 6
b) Chromosome 7
c) Chromosome 12
d) Chromosome 15
e) Chromosome 20

239. A 3-day-old male newborn appears with heart murmur. Oxygen saturation values are the following: right atrium (72%), right ventricle (83%), left atrium (100%), left ventricle (100%), pulmonary artery (87%), and aorta (100%). Blood flow volume (L/minute/$m^2$) through the heart and blood vessels is the following: right atrium (3), right ventricle (5), left atrium (6), left ventricle (6), pulmonary artery (5), and aorta (4). The most likely diagnosis is:
a) Tetralogy of Fallot
b) VSD
c) Pulmonary stenosis
d) Aortic stenosis
e) Transposition of great arteries

240. A child had surgery for right ventricular outflow tract obstruction. The expected postoperative complication is:
a) Pulmonic stenosis
b) Tricuspid regurgitation
c) Pulmonary valvular insufficiency
d) Tricuspid stenosis
e) Rupture interventricular septum

241. A child has congenital absence of the pulmonary valve. The most common associated anomaly is:
   a) ASD
   b) VSD
   c) Aortic stenosis
   d) Pulmonic stenosis
   e) Congenital absence of tricuspid valve

**Match the different cardiac conditions with different types of murmurs (242-246):**

242. Coarctation of the aorta
243. Mitral valve prolapse
244. Pulmonary valvular insufficiency
245. Congenital mitral insufficiency
246. Congenital mitral stenosis

a) A low-pitched decrescendo diastolic murmur at the upper and midleft sternal border
b) A short systolic murmur is noted along the left sternal border at the 3rd and 4th intercostal spaces; murmur is transmitted to the left infrascapular area.
c) Apical murmur is late systolic and associated with a click.
d) A high-pitched ("cooing dove"), apical holosystolic murmur
e) A rumbling apical diastolic murmur is followed by loud 1st sound; 2nd sound is loud and split.

247. A child has sickle cell disease with hereditary persistence of fetal hemoglobin. The following complication may occur:
   a) Pulmonary hypertension
   b) Gross hematuria
   c) Avascular necrosis of the hips
   d) Pituitary infarction
   e) Intracranial hemorrhage

248. The most common organism responsible for post-splenectomy sepsis is:
   a) Haemophilus influenzae
   b) Neisseria meningitides
   c) Plasmodium falciparum
   d) Babesia microti
   e) Streptococcus pneumoniae

249. All of the following conditions can cause functional hyposplenism **except**:
   a) Congenital polysplenia
   b) Premature infants
   c) Malaria
   d) Severe hemolytic anemias
   e) Irradiation to the left upper quadrant

250. Splenic hypofunction is characterized by:
   a) Platelet inclusions in smear
   b) Thrombocytopenia
   c) Thrombocytosis
   d) Large size platelets
   e) RBC inclusions in peripheral blood smears

251. All of the following preoperative, intraoperative, and postoperative management can reduce the risk of infection in post-splenectomy patients **except**:
   a) It is better to postpone the operation until 4 years of age.
   b) Pneumococcal, meningococcal, and H. influenzae vaccines should be given before splenectomy.
   c) Laparascopic splenectomy has reduced the morbidity and hospitalization time after surgery.
   d) After surgical splenosis (spreading small pieces of spleen throughout the abdomen) or spontaneous splenosis, the splenic tissue that regrows usually has inadequate function.
   e) Oral prophylactic penicillin therapy should be provided for at least 2 years after splenectomy or 6 years of age.

**Match the following diseases with the tumors (252-256):**

252. Peutz-Jeghers syndrome
253. Neurofibromatosis 2
254. Tuberous sclerosis
255. Rendu-Osler-Weber syndrome
256. von Hippel-Lindau disease

a) Angioma
b) Gastrointestinal cancer
c) Myocardial rhabdomyoma
d) Hemangioblastoma of the cerebellum
e) Bilateral acoustic neuromas

**Match the following syndromes with the tumors (257-261):**

257. Wermer syndrome
258. Sipple syndrome
259. Bloom syndrome
260. Klinefelter syndrome
261. Noonan syndrome

a) Parathyroid adenoma
b) Medullary carcinoma of the thyroid
c) Breast cancer
d) Schwannoma
e) Leukemia

262. A male child has vesicoureteral reflux. He has a female sibling who is asymptomatic. The incidence of reflux in siblings of children with reflux is:
a) 10%
b) 15%
c) 25%
d) 35%
e) 25%

263. The incidence of renal scarring in asymptomatic siblings with vesicoureteral reflux is:
a) 1%
b) 6%
c) 12%
d) 15%
e) 25%

264. A 20-year-old mother appears with of vesicoureteral reflux. She delivered a newborn male infant. The incidence of reflux in an offspring when mother appears with a history of reflux is:
a) 10%
b) 15%
c) 25%
d) 35%
e) 50%

265. The most common obstructive lesion in urinary tract is:
a) Prune-belly syndrome
b) Posterior urethral valve
c) Urethral stricture
d) Ureterovesicle junction obstruction
e) Ureteropelvic junction obstruction

266. The most common cause of UPJ obstruction is:
  a) Intrinsic
  b) Abnormal rein veins causing obstruction
  c) Abnormal renal artery causing obstruction
  d) Lymph nodes causing pressure on the ureter
  e) Mesenteric band causing pressure on the ureter

267. All of the following are usual presentations in patients with UPJ obstruction **except**:
  a) Hypertension
  b) Prenatal maternal ultrasonographic findings reveal fetal UPJ obstruction
  c) A palpable renal mass during the routine physical examination.
  d) Pain in the flank or abdomen
  e) A febrile urinary tract infection

268. A girl has ureterocele. The most common associated finding is:
  a) Single ureter
  b) Ureteral duplication
  c) Small urinary bladder
  d) Single kidney
  e) Hypertrophied urinary bladder

269. A boy has ureterocele. The most common associated finding is:
  a) Horseshoe kidney
  b) Single ureter
  c) Multicystic kidney
  d) Posterior urethral valve
  e) Thickened urinary bladder

270. The time to repair in children with epispadias is:
  a) 1-5 months of age
  b) 6-12 months of age
  c) 13-18 months of age
  d) 19-24 months of age
  e) 25-36 months of age

271. The most common tumor occurs in undescended testes is:
  a) Embryonal carcinoma
  b) Choriocarcinoma
  c) Yolk sac carcinoma
  d) Sertoli-Leydig cell tumor
  e) Seminoma

272. Hepatocellular carcinoma can occur with all of the following conditions **except**:
  a) Hepatitis B infection
  b) Biliary cirrhosis
  c) Hepatitis A infection
  d) Glycogen storage disease
  e) Alpha 1-antitrypsin deficiency

273. The most common site of metastasis in patients with hepatoblastoma is:
  a) CNS
  b) Lungs
  c) Spleen
  d) Bones
  e) Small intestine

274. A full term newborn has left undescended testis. The mother is worried. The physician should tell the mother:
  a) The testis will descend by 1 month of age.
  b) The testis will descend by 2 months of age.

c) The testis will descend by 3 months of age.
d) If the testis does not descend by 5 months of age, it will remain undescended.
e) If the testis does not descend by 6 months of age, it will remain undescended.

275. A newborn has bilateral undescended testes. The physician should suspect the following diagnosis:
a) Seminoma of the testes
b) Testicular torsion in utero
c) Prader-Willi syndrome
d) Klinefelter syndrome
e) Virilized female with congenital adrenal hyperplasia

276. The orchiopexy is performed for an undescended testis between:
a) 1-3 months of age
b) 3-6 months of age
c) 6-9 months of age
d) 9-15 months of age
e) 15-24 months of age

277. The most common associated finding in patients with an undescended testis is:
a) Malignancy
b) Teratoma
c) Testicular torsion
d) Direct inguinal hernia
e) Indirect inguinal hernia

278. A 5-year-old boy appears for a routine physical examination. His right testis is not in the scrotum. The physician is able to bring the testis down into the scrotum. He had normal physical examination at birth. The most likely diagnosis is:
a) Retractile testis
b) Inguinal hernia
c) Testicular torsion
d) Cryptorchid testis
e) 'Acquired' or ascending undescended testis

**Match the following different conditions of the testis and underlying mechanisms (279-282):**

279. Undescended testis
280. Retractile testis
281. 'Acquired' or ascending undescended testis
282. Vanishing testis

a) Incomplete disappearance of processus vaginalis
b) Brisk cremasteric reflex
c) Failure of hormonal and/or mechanical factors
d) Testicular torsion in utero

283. A 12-year-old boy appears with sudden onset of pain in the scrotum for the last 2 hours. He denies history of trauma but he was playing soccer. A physical examination reveals swollen and tender right testis. The cremasteric reflex is absent. The preferred therapy is:
a) Prompt surgical exploration, detorsion of the testis, and scrotal orchiopexy
b) Surgical exploration, detorsion of the testis, and orchiopexy after 24 hours
c) Cold compress locally and observation for 24 hours
d) Hot compress locally and analgesic therapy
e) Bed rest; NSAIDs for 5 days

284. A 9-year-old boy appears with painless paratesticular mass on the right side. The mass is described as 'bag of worms'. The following investigation should be performed:
a) Testicular scan
b) Urine culture
c) Doppler ultrasonography

d) Ultrasonography of the testis
e) Ultrasonography of the abdomen

285. A female patient appears with intermittent sharp right lower abdominal pain for the last 24 hours. The pain radiates to the right extremity. She has no fever. She denies history of trauma. She has irregular menstrual cycles for the last 1 year. The preferred therapy is:
a) Appendectomy
b) Aspiration of right hip joint
c) Cefuroxime
d) Laxative therapy
e) Laparascopic detorsion of the right ovary

286. The triad of problems in female athletes are:
a) Amenorrhea, disordered eating, and using steroids
b) Dysmenorrhea, anorexia, and hyperthyroidism
c) Dysmenorrhea, anorexia nervosa, and hypothyroidism
d) Amenorrhea, disordered eating, and ovarian failure
e) Amenorrhea, disordered eating, and osteoporosis

287. The most common associated anomaly in patients with Mayer-Rokitansky-Kuster-Hauser syndrome is:
a) Renal
b) Liver
c) Intestinal
d) CNS
e) Cardiac

288. All of the following are manifestations of Mayer-Rokitansky-Kuster-Hauser syndrome **except**:
a) Primary amenorrhea
b) Normal vagina
c) Normal ovaries
d) Attenuated fallopian tubes
e) Duplication anomaly of the uterus

289. The mode of inheritance in patients with congenital absence of vaginal (Mayer-Rokitansky-Kuster-Hauser syndrome) is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial/polygenic

290. Wolfram syndrome includes all of the following manifestations **except**:
a) Diabetes mellitus
b) Nephrogenic diabetes insipidus
c) Optic atrophy
d) Deafness
e) Central diabetes insipidus

**Match the following diseases with the different parameters (291-293):**

291. Syndrome of inappropriate antidiuretic hormone secretion
292. Central diabetes insipidus
293. Cerebral salt wasting

a) Low (serum sodium, intravascular volume, vasopressin levels); high (urine output); very high (urine sodium); normal or high (serum uric acid levels)
b) Low (serum sodium, serum uric acid); high (urine sodium, vasopressin level); normal or high (intravascular volume); normal or low (urine output)
c) Low (urine sodium, intravascular volume, vasopressin level); high (serum sodium, urine output, serum uric acid level)

294. All of the following conditions cause fetal overgrowth **except**:
   a) Sotos syndrome
   b) Weaver syndrome
   c) Maternal diabetes mellitus
   d) SHOX excess syndrome
   e) Beckwith-Wiedemann syndrome

295. All of the following conditions cause childhood tall stature **except**:
   a) Fragile X syndrome
   b) Marfan syndrome
   c) Klinefelter syndrome
   d) Testicular feminization syndrome
   e) McCune-Albright syndrome

296. A 12-year-old boy has tall stature. His predicted adult height is 77 inches or 196 cm. His both parents are tall. He does not like his tall stature. The preferred therapy is:
   a) Testosterone enanthate
   b) Ethinyl estradiol
   c) Anabolic steroid
   d) Estrogen and progesterone
   e) Reassurance

297. A 10-year-old girl has tall stature. Her predicted adult height is 70 inches or 178 cm. Her both parents are tall. She does not like her tall stature. The preferred therapy is:
   a) Ethinyl estradiol
   b) Estrogen and progesterone
   c) Growth hormone inhibiting factor
   d) Anabolic steroid
   e) Reassurance

298. All of the following are features of Sotos syndrome (cerebral gigantism) **except**:
   a) Large hands and feet
   b) Large, dolichocephalic head
   c) Abnormal EEG findings
   d) Elevated GH and IGF-I levels
   e) Clumsiness and awkward gait

299. The most common type of thyroid cancer is:
   a) Medullary carcinoma
   b) Follicular carcinoma
   c) Papillary carcinoma
   d) Undifferentiated carcinoma
   e) Mixed papillary-follicular carcinoma

300. All of the following clinical manifestations are present in infants and younger children with multiple endocrine neoplasia, type II B **except**:
   a) Neuromas
   b) Poor sucking
   c) Diarrhea
   d) Constipation
   e) Failure to thrive

301. A child appears with history of muscle cramps and pains for the last 1 month. He develops numbness, tingling, and stiffness of the hands and feet for the last 7 days. The most likely the child has the following finding:
   a) Elevated serum calcium level
   b) Low serum phosphorus level
   c) Elevated serum alkaline phosphatase level
   d) A short QT interval on the ECG
   e) A positive Chvostek or Trousseau sign

302. All of the following findings are complications of long-standing hypocalcemia **except**:
  a) Mental deficiency
  b) Cataracts
  c) Mucocutaneous candidiasis
  d) Dry and scaly skin
  e) Premature eruption of teeth

303. A child has hypoparathyroidism. However, the serum calcium level is normal. The most likely the child is also suffering from:
  a) Hyperparathyroidism
  b) Hyperthyroidism
  c) Hyperpituitarism
  d) Pseudohypoparathyroidism
  e) Addison disease

304. A child appears for a routine physical examination. He is asymptomatic. His serum calcium level is elevated, PTH level is normal, serum magnesium level is high normal, but the rate of calcium to creatinine clearance is decreased. He has two younger siblings. They are both asymptomatic. The preferred management is:
  a) Subtotal parathyroidectomy
  b) Total parathyroidectomy
  c) Remove malignant rhabdoid tumors of the kidney
  d) Remove rhabdomyosarcoma of the extremity
  e) Detection of a serum calcium level in siblings

305. The preferred therapy in patients with hypercalcemia secondary to sarcoidosis is:
  a) Furosemide
  b) Intravenous hydration
  c) High phosphate diet
  d) Vitamin D therapy
  e) Prednisone

306. All of the following conditions can cause hypercalcemia **except**:
  a) Prolong immobilization
  b) Hypophosphatasia
  c) Williams syndrome
  d) Albright hereditary osteodystrophy
  e) Jansen-type metaphyseal chondrodysplasia

307. A child has history of adrenal insufficiency. She receives oral cortisol therapy. She is in the operating room for appendectomy. She should receive the following therapy:
  a) Reduce the hydrocortisone during surgery
  b) Reduce the hydrocortisone dose before and during surgery
  c) Slightly increase the hydrocortisone dose during surgery
  d) Give fludrocortisone during surgery
  e) Give high intravenous dose of hydrocortisone

308. All of the following drugs can cause adrenal insufficiency **except**:
  a) Rifampin
  b) Ketoconazole
  c) Phenytoin
  d) Phenobarbital
  e) INH

309. The following serotype of group A beta-hemolytic streptococci can cause **epidemics of nephritis after throat infections** is:
  a) Serotype 1
  b) Serotype 6
  c) Serotype 12
  d) Serotype 49
  e) Serotype 55

310. The following serotype of group A beta-hemolytic streptococci (Streptococcus pyogenes) can cause **epidemics of nephritis after skin infections** is:
   a) Serotype 24
   b) Serotype 49
   c) Serotype 55
   d) Serotype 57
   e) Serotype 59

311. The most common complication of acute poststreptococcal glomerulonephritis is:
   a) Hypertension
   b) Seizures
   c) Cardiac failure
   d) Hyperkalemia
   e) Hyperphosphatemia

312. A 15-year-old girl has **comedonal acne**. The therapy **not** indicated is:
   a) Oral doxycycline
   b) Topical tretinoin
   c) Topical salicylic acid
   d) Topical azelaic acid
   e) Topical adapalene

313. A 16-year-old boy has **mild papulopustular acne**. The therapy **not** indicated is:
   a) Oral isotretinoin
   b) Topical benzoyl peroxide
   c) Oral doxycycline plus topical retinoid
   d) Topical benzoyl peroxide gel with clindamycin
   e) Topical benzoyl peroxide gel with erythromycin

314. A 17-year-old girl has severe papulopustular and nodular acne. She used benzoyl peroxide gel, oral doxycycline plus topical retinoid. The acne has not improved. The preferred therapy is:
   a) Oral isotretinoin
   b) Oral minocycline
   c) Oral minocycline plus topical retinoid
   d) Continue benzoyl peroxide gel
   e) Benzoyl peroxide gel with clindamycin

315. A child has congenital scoliosis. The following investigation should be performed in all children with congenital scoliosis:
   a) Echocardiogram
   b) Renal ultrasonography
   c) Head CT scan
   d) Pulmonary function tests
   e) Liver ultrasonography

316. The most common renal anomaly in patients with congenital scoliosis is:
   a) Unilateral renal agenesis
   b) Horseshoe kidney
   c) Pelvic kidney
   d) Polycystic kidney
   e) Duplication of the ureter

317. The most common associated anomaly in patients with congenital scoliosis is:
   a) Spinal dysraphism
   b) Unilateral renal agenesis
   c) Mitral valve prolapse
   d) Intestinal obstruction
   e) Biliary atresia

318. The most common type of spinal dysraphism in patients with congenital scoliosis is:
a) Meningomyelocele
b) Spina bifida occulta
c) Intradural Lipoma
d) Spinal cord cyst
e) Spinal cord tethers

319. A 5-year-old girl complains of back pain for the last 7 days. She denies history of trauma. The most common cause of back pain in preadolescent children is:
a) Organic
b) Psychological
c) Mechanical
d) Abnormal posture
e) Unknown

320. The preferred initial diagnostic procedure for patients with back pains is:
a) CT scan
b) MRI
c) Bone scan
d) ESR
e) Plain x-ray of the spine

321. The most consistent presenting feature in patients with Marfan syndrome is:
a) Positive Steinberg sign
b) Positive wrist sign
c) Echocardiography reveals aortic root dilatation
d) Dislocated lens
e) Tall stature with diminished upper segment/lower segment ratio

322. The patients with Marfan syndrome should be followed by all of the following pediatric subspecialists **except**:
a) Cardiologist
b) Opthalmologist
c) Orthopedic surgeon
d) Nephrologist
e) Physical therapist

323. A pregnant mother with Marfan syndrome is receiving beta-adrenergic blocking agent. All of the following complications can occur in the newborn **except**:
a) Hypothermia
b) Hypoglycemia
c) Bradycardia
d) Hypotension
e) Hypogonadism

324. The following statement is **not** true about genetic counseling of Marfan syndrome:
a) Marfan syndrome is autosomal dominant.
b) About 15-30% of cases are the first Marfan syndrome in their families.
c) Fathers of sporadic Marfan syndrome cases are usually not older than fathers in the general population.
d) There is minimal risks to the future offspring of normal parents.
e) Each offspring of Marfan syndrome patients has 50% chance of inheriting the chromosome 15 with mutant FBN1 allele.

325. The **hematopoietic syndrome** (or clear hematologic depression) occurs after acute whole body irradiation from X-ray or Gamma rays above:
a) 50 rads (0.5 Gy)
b) 100 rads (1.0 Gy)
c) 200 rads (2.0 Gy)
d) 400 rads (4.0 Gy)
e) 800 rads (8.0 Gy)

326. The **gastrointestinal syndrome** occurs after acute whole body irradiation from X-rays or Gamma rays above:
  a) 100 rads (1.0 Gy)
  b) 200 rads (2.0 Gy)
  c) 400 rads (4.0 Gy)
  d) 800 rads (8.0 Gy)
  e) 3,000 rads (30.0 Gy)

327. The symptoms (e.g., nausea and vomiting) begin in **some patients (about 10% of cases)** after acute whole body irradiation from X-rays or Gamma rays above:
  a) 5 rads (0.05 Gy)
  b) 10 rads (0.10 Gy)
  c) 15 rads (0.15 Gy)
  d) 50 rads (0.5 Gy)
  e) 100 rads (1.0 Gy)

328. A 12-year-old boy appears with persistent vomiting for the last 12 hours. He has history of recurrent episodes of abdominal pain with occasional episodes of vomiting and diarrhea for the last 9 years. He was seen by gastroenterologist several times. He visited emergency room on several occassions. The diagnosis of viral gastritis/enteritis/gastroenteritis were made in different visits. The parents denied history food allergy. He did not eat foods from restaurant recently. He is doing very well in school. His height and weight measurement are at the 10th percentile. He had no bowel surgery in the past. His birth history was unremarkable. He has no family history of a chronic intestinal disease. The physical examination reveals a soft but mildly tender mid-abdomin and epigastric regions. His bowel pattern is normal. The most likely diagnosis is:
  a) Psychologic vomiting
  b) Intussuception
  c) Hirschspring disease
  d) Recurrent appendicitis
  e) Malrotation with intermittent volvulus

329. The diagnosis of malrotation can be made by all of the following findings **except**:
  a) The abdominal plain film reveals double-bubble sign.
  b) The barium enema reveals malposition of the cecum.
  c) The upper gastrointestinal series reveals malposition of the ligament of Treitz.
  d) The ultrasonography reveals superior mesenteric vein located to the left of the superior mesenteric artery.
  e) The ultrasonography reveals superior mesenteric vein located to the right of the superior mesenteric artery.

330. The Jejunoileal atresia is most likely due to:
  a) Intrauterine nerve injury
  b) Intrauterine muscular injury
  c) Intrauterine vascular accidents
  d) Failure to recanalize the lumen
  e) Intrauterine epithelial injury

331. The duodenal atresia occurs most likely due to:
  a) Failure to recanalize the lumen in utero
  b) Intrauterine epithelial injury
  c) Intrauterine muscular injury
  d) Intrauterine mesenteric injury
  e) Intrauterine vascular accident

332. All of the following congenital anomalies are associated with duodenal atresia **except**:
  a) Down syndrome
  b) Malrotation
  c) Esophageal atresia
  d) Congenital heart disease
  e) Jejunal atresia

**Match the following diseases with the different findings (333-337):**

333. Malrotation
334. Pyloric stenosis
335. Duodenal atresia
336. Jejunal atresia
337. Hirschsprung disease

a) Double-bubble sign
b) Ladd band
c) Hypochloremic metabolic alkalosis
d) Absence of ganglion cell
e) Triple-bubble sign

338. The most common cause of lower intestinal obstruction in neonates is:
a) Imperforate anus
b) Hypoplastic left colon
c) Hypoplastic right colon
d) Hirschsprung disease
e) Hypoplastic transverse colon

339. Hirschsprung disease is associated with all of the following conditions **except**:
a) Down syndrome
b) Waardenburg syndrome
c) Cartilage-hair hypoplasia
d) Turner syndrome
e) Smith-Lemli-Opitz syndrome

340. In older patients with Hirschsprung disease, the Currarino triad may be present. **The Currarino triad** includes all of the following **except**:
a) Ectopic anus, hypoplastic sacral bones, and presacral anterior meningocele
b) Rectal stenosis, poor segmentation of sacral bones, and presacral teratoma
c) Ectopic anus, poor segmentation of sacral bones, and presacral cyst
d) Rectal stenosis, hypoplastic sacral bones, and presacral anterior meningocele
e) Ectopic anus, hypoplastic sacral bones, and posterior meningomyelocele

341. All of the following features can distinguish Hirschsprung disease from functional (or acquired) constipation **except**:
a) Anal tone
b) Age of onset
c) Enterocolitis
d) Malnutrition
e) Rectal biopsy findings

342. All of the following laboratory findings are characteristics of Hirschsprung disease **except**:
a) Rectal biopsy reveals absence of ganglion cells.
b) Rectal biopsy reveals decreased acetylcholinesterase staining.
c) Barium enema reveals a transition zone and delayed evacuation (more than 24 hours).
d) Anorectal manometry reveals absence of internal sphincter relaxation with rectal distension.
e) Anorectal manometry reveals a paradoxical increase in internal sphincter pressure with rectal distension.

343. A 4-year-old girl appears with abdominal pain, nausea, vomiting, and low grade fever for the last 6 hours. The abdominal pain started before the nausea, vomiting, and fever. She denies history of trauma. The physical examination reveals flat abdomen, periumbilical tenderness, and normal bowel sounds. The most likely diagnosis is:
a) Acute gastritis
b) Acute gastroenteritis
c) Hemolytic-uremic syndrome
d) Food allergy
e) Acute appendicitis

344. All of the following laboratory findings suggest acute appendicitis **except**:
   a) Presence of 31 WBCs per high-power field in urine.
   b) Leukocytosis
   c) Presence of 20 RBCs per high-power field in urine
   d) A shift in differential diagnosis of WBCs
   e) Mild proteinuria

345. A male newborn infant is diagnosed to have rectovesical fistula. The most likely associated anomaly is:
   a) Cardiac
   b) CNS
   c) Hepatic
   d) Musculoskeletal
   e) Urologic

346. A simple anoplasty is performed in the newborn with perianal fistula. The colostomy is not required. The following procedure is indicated 2 weeks after surgery:
   a) Barium enema
   b) Upper GI follow through
   c) Colostomy
   d) Anal dilatations
   e) Rectal manometry

347. All of the following therapies are not indicated in patients with anal fissure **except**:
   a) Stretching of the anus
   b) Excision of the fissure
   c) Anal dilatations
   d) Stool softener
   e) 'Internal' anal sphincterotomy

348. The most common cause of rectal prolapse is:
   a) Chronic constipation
   b) Cystic fibrosis
   c) Pertussis
   d) Diarrhea
   e) Idiopathic

349. A 22-month-old male child appears with low-grade fever, perianal redness, and painful defecation for the last 2 days. He was completely asymptomatic prior to this episode. A physical examination reveals perianal cellulitis and rectal tenderness. The diagnosis of perianal abscess is made. The preferred therapy is:
   a) Incision and drainage
   b) Excision and drainage
   c) Vancomycin
   d) Gentamicin
   e) No therapy is indicated

350. A mother is pregnant. She has one sibling with congenital adrenal hyperplasia (CAH). The earliest preferred method to diagnose the fetus with CAH is:
   a) Amniocentesis
   b) Elevated 17-hydroxyprogesterone levels in the amniotic fluid.
   c) Elevated 17-hydroxyprogesterone levels in the fetal blood.
   d) Elevated ACTH levels in the fetal blood.
   e) DNA analysis of specimens obtained by chorionic villus sampling

351. The most important reason to make early prenatal diagnosis is:
   a) To relieve parental anxiety
   b) To monitor the fetal growth by fetal ultrasonography
   c) To look for an ambiguous genitalia by fetal ultrasonography
   d) To facilitate appropriate prenatal therapy of the affected male fetus
   e) To facilitate appropriate prenatal therapy of the affected female fetus

352. The preferred prenatal therapy for the fetus with congenital adrenal hyperplasia (CAH) is:
   a) Administration of dexamethasone directly into the fetal umbilical venous blood in utero.
   b) Administration of dexamethasone directly into the fetal umbilical arterial blood in utero.
   c) Administration of dexamethasone directly into the amniotic fluid in utero.
   d) Administration of dexamethasone to the mother (20 micrograms/kg prepregnancy maternal weight daily in two or three divided doses) of an affected fetus.
   e) Administration of dexamethasone to the mother (40 micrograms/kg pregnancy maternal weight daily in two or three divided doses) of an affected fetus.

353. The goal of early prenatal therapy in fetus with congenital adrenal hyperplasia is:
   a) To prevent the virilization of the external genitalia of the male fetus.
   b) To prevent the virilization of the external genitalia of the female fetus.
   c) To prevent the electrolyte imbalance of the male fetus.
   d) To prevent the electrolyte imbalance of the female fetus.
   e) To prevent the adrenal atrophy of the female fetus

354. The dexamethasone therapy to the mother of an affected fetus with CAH should be started to prevent the virilization of the external genitalia of the female fetus by:
   a) 6 weeks of age
   b) 8 weeks of age
   c) 10 weeks of age
   d) 12 weeks of age
   e) 15 weeks of age

355. The specific side effect on fetus when mother was treated with dexamethasone is:
   a) Adrenal crisis
   b) VSD
   c) Hyperglycemia
   d) Cleft lip
   e) Unknown

356. All of the following statements are true about the newborn screening in infants to diagnose congenital adrenal hyperplasia (CAH) **except**:
   a) The nonclassic form of CAH is detected reliably.
   b) The screening test analyze 17-hydroxyprogesterone levels in dried blood.
   c) The initial abnormal results should be confirmed by repeat serum 17-hydroxyprogesterone levels and electrolytes about 2 weeks of age.
   d) This test has high sensitivity and low specificity.
   e) This test has more problems in premature infants.

357. The preferred therapy in children with pituitary Cushing disease is:
   a) Transphenoidal pituitary microsurgery
   b) Pituitary irradiation
   c) Cyproheptadine
   d) Bilateral adrenalectomy
   e) Unilateral adrenalectomy

358. A 10-month-old girl appears with URI symptoms. A physical examination reveals runny nose, rounded face, prominent cheeks, flushed appearance, and mildly injected pharynx. The most likely underlying diagnosis is:
   a) Acute bacterial pharyngitis
   b) Pulmonic stenosis
   c) Acute tonsillitis
   d) Cushing syndrome
   e) Infant of a diabetic mother

359. All of the following are clinical manifestations in older children with Cushing syndrome **except**:
   a) Obesity of the face and trunk
   b) Short stature
   c) Hypertension

d) Osteoporosis
e) Advanced pubertal development

360. All of the following laboratory findings can make the diagnosis of Cushing syndrome **except**:
a) Cortisol levels in blood are elevated at midnight and 8 AM.
b) Nighttime salivary cortisol levels are decreased.
c) In a 24-hour-urine sample, an increased ratio of micrograms of cortisol excreted per gram of creatinine.
d) An abnormal glucose tolerance test despite elevated levels of insulin.
e) A single-dose dexamethasone suppression test (25-30 micrograms/kg, given at 11 PM) fails to decrease the plasma cortisol level of less than 5 micrograms/dL at 8 AM in the next morning.

361. The following serum electrolyte is abnormal in patients with Cushing syndrome, especially tumors with ectopic ACTH secretion:
a) Sodium
b) Potassium
c) Chloride
d) Bicarbonate
e) BUN and creatinine

**Match all of the following findings (362-366):**

362. Tall stature
363. Short stature
364. Elevated urinary excretion of cortisol
365. Elevated nighttime salivary levels of cortisol
366. Cortisol secretion is suppressed by oral administration of low doses of dexamethasone.

a) Simple obesity
b) Cushing syndrome
c) Both

**Match all of the following findings (367-371):**

367. Two-step dexamethasone suppression test (30 and 120 micrograms/kg/day in four divided doses, on consecutive days) does not suppress cortisol levels.
368. Two-step dexamethasone suppression test reveals that only larger dose suppresses cortisol levels.
369. ACTH concentrations are suppressed.
370. Intravenous corticotropin-releasing hormone (CRH) increases ACTH and cortisol levels.
371. Intravenous CRH does not increase ACTH and cortisol levels.

a) Pituitary Cushing syndrome (ACTH-dependent)
b) ACTH-independent Cushing syndrome

372. The preferred test to distinguish adolescents with secondary hypogonadism from adolescents with a delayed puberty is:
a) The gonadotropin response to stimulation with GnRH.
b) The gonadotropin response to stimulation with more potent analogue of GnRH
c) The use of GnRH analogue or the GnRH test after 36 hours of ‘priming’ of the hypothalamic-pituitary-gonadal axis with administration of pulsatile GnRH.
d) A single, 8 AM testosterone level is more than 0.7 mmol/L (20 mg/dL).
e) A single, 8 AM testosterone level is less than 0.7 mmol/L (20 mg/dL).

373. An adolescent male is diagnosed with secondary hypogonadotropic hypogonadism. He was treated with testosterone enanthate ester. The testes remain small. He also received hCG therapy. After 12 months of therapy, sufficient growth of the tests has not occurred. The following therapy may be added at this point:
a) Growth hormone
b) ACTH
c) Dehydrotestosterone
d) Prolactin
e) Human menopausal gonadotropin

374. All of the following manifestations are noted in patients with diabetes mellitus with infection **except**:
   a) Hypoglycemia
   b) Hyperglycemia
   c) Ketonuria
   d) Ketosis
   e) Overhydration

375. A child with diabetes mellitus becomes sick. She receives glargine and NPH insulin regularly. She should call her physician or nurse in all of the following conditions **except**:
   a) If the blood glucose remains elevated after two extra doses of insulin.
   b) If the blood glucose remains elevated after three extra doses of insulin.
   c) Signs of dehydration
   d) If the blood glucose less than 70 mg/dL and the child cannot take oral glucose.
   e) If the child has moderate to large ketones in each urine specimen despite extra doses of insulin and vomiting.

376. A child with diabetes mellitus developed large ketonuria and persistent vomiting. The nurse told him to go to the ER. The ER physician should perform all of the following tests **except**:
   a) Serum glucose
   b) Blood pH
   c) Serum electrolytes
   d) Total $CO_2$
   e) Serum insulin levels

377. A child with diabetes mellitus is going to have an elective surgery. She is asymptomatic. Her laboratory values are normal. Her insulin doses are adjusted appropriately. The following fluid therapy recommended during surgery is:
   a) 5% glucose, 0.45% saline solution with 10 mEq/L of potassium acetate is given at 1.0 time maintenance rate.
   b) 0% glucose, 0.9% saline solution with 20 mEq/L of potassium acetate is given at 1.5 times maintenance rate.
   c) 10% glucose, 0.9% saline solution with 40 mEq/L of potassium acetate is given at 1.5 times maintenance rate.
   d) 5% glucose, 0.3% saline solution with 20 mEq/L of potassium acetate is given at 1.5 times maintenance rate.
   e) 5% glucose, 0.45% saline solution with 20 mEq/L of potassium acetate is given at 1.5 times maintenance rate.

378. A child has diabetes mellitus and developed acute appendicitis. She received her insulin doses prior to surgery. During surgery, her blood glucose level is 180 mg/dL. the preferred therapy is:
   a) No insulin infusion is indicated.
   b) 0.03 units/kg/hour insulin infusion is indicated.
   c) 0.06 units/kg/hour insulin infusion is indicated.
   d) 0.08 units/kg/hour insulin infusion is indicated.
   e) 0.10 units/kg/hour insulin infusion is indicated.

379. All of the following statements are true regarding management of children with diabetes mellitus during perioperative period of surgery **except**:
   a) If glargine is used as the basal insulin, one half of the dose is given in the evening before surgery.
   b) If NPH or lente insulin is used, one half of the morning dose is given before surgery.
   c) An elective surgery should be performed early in the day.
   d) A full oral intake is expected shortly after surgery when the duration of surgery is less than 1 hour.
   e) The child should not be discharged until oral intake is tolerated and blood glucose levels are stable.

380. The Mauriac syndrome includes all of the following **except**:
   a) Moon face
   b) Enlarged liver
   c) Proximal muscle wasting
   d) Protuberant abdomen
   e) Over-insulinization

**Match all of the following cranial nerve involvement and clinical manifestations (381-385):**

381. Hypoglossal nerve (12th cranial nerve)
382. Vagus nerve (10th cranial nerve)
383. Glossopharyngeal nerve (9th cranial nerve)
384. Trigemial nerve (5th cranial nerve)
385. Accessory nerve (11th cranial nerve)

a) Paralysis of the sternomastoid and trapezius muscles
b) Absence of corneal reflex
c) Absence of gap response of the posterior pharyngeal wall
d) Presence of wasting, weakness, and fasciculations of the tongue
e) Asymmetry of the soft palate and hoarseness

**Match all of the following cranial nerve involvement and clinical manifestations (386-390):**

386. Oculomotor nerve (3rd cranial nerve)
387. Trochlear nerve (4th cranial nerve)
388. Abducens nerve (6th cranial nerve)
389. Trigeminal nerve (5th cranial nerve)
390. Vagus nerve (10th cranial nerve)

a) Nasal regurgitation of fluids, pooling of secretions, and immobile, low-lying soft palate
b) Absence of jaw jerk
c) Ptosis, dilatation of the pupil, displacement of the eye outward and downward, and impairment of adduction and elevation
d) Medial deviation of the eye and inability to abduct beyond the midline
e) Upward and outward deviation of the eye

391. All of the following statements are true about the average rate of head growth in healthy premature infants **except**:
a) 0.25 cm during the 1st week of life
b) 0.50 cm during the 2nd week of life
c) 0.75 cm during the 3rd week of life
d) 1.0 cm during the 4th week of life
e) 1.0 cm per week from the 5th week until the 40th week of development

392. The head circumference of full term infants at birth is about:
a) 32-33 cm
b) 33-34 cm
c) 34-35 cm
d) 35-36 cm
e) 36-37 cm

393. The head circumference of 6-month-old children who were born full term is about:
a) 40 cm
b) 44 cm
c) 47 cm
d) 50 cm
e) 52 cm

394. The head circumference of 12-month-old children who were born full term is about:
a) 45 cm
b) 46 cm
c) 47 cm
d) 48 cm
e) 49 cm

395. The most common cause of anosmia is:
a) Congenital
b) Hydrocephalus

c) Meningitis
d) Fracture of nasal bones
e) URI

396. All of the following conditions can produce loud cranial bruits **except**:
a) Hydrocephalus
b) Purulent meningitis
c) Intracranial tumor
d) Subdural effusions
e) A normal 2-year-old child

397. All of the following conditions can produce soft cranial bruits **except**:
a) Children with febrile illness
b) Murmurs arising from the heart
c) Severe anemia
d) Children younger than 4 years of age
e) Arteriovenous malformation of vein of Galen

398. A routine full-term newborn physical examination reveals bilateral retinal hemorrhages. He was born by NSVD with Apgar scores 9 and 9 at 1 and 5 minutes respectively. The rest of the physical examination is unremarkable. The next step in management is:
a) Opthalmology consultation
b) Head CT scan
c) Head ultrasonography
d) MRI of the eye
e) Reassurance

399. A routine full-term newborn physical examination reveals the size of the anterior fontanel is about 2 by 2 cm. The next step in management is:
a) Head ultrasonography
b) Head CT scan
c) Skull x-ray
d) Neurology consultation
e) Reassurance

400. The average time of closure of anterior fontanel is:
a) 9 months
b) 12 months
c) 15 months
d) 18 months
e) 24 months

401. The average time of closure of posterior fontanel is after the first:
a) 3-5 weeks of life
b) 6-8 weeks of life
c) 9-12 weeks of life
d) 13-15 weeks of life
e) 16-18 weeks of life

402. A 9-month-old girl appears for a routine physical examination. A physical examination reveals that the anterior fontanel is closed. The next step in management is:
a) Skull x-ray
b) Head CT scan
c) Head MRI
d) Neurosurgical consultation
e) Reassurance

**Match the following clinical manifestations and different diagnosis (403-405):**

403. Hydrocephalus
404. Microcephaly
405. Chronic Subdural hematomas

a) A full-term newborn with head circumference of 25 cm
b) Box-shaped skull
c) Broad forehead

406. Horner syndrome includes all of the following features **except**:
a) Miosis
b) Dilated pupil
c) Ptosis
d) Enopthalmos
e) Ipsilateral anhidrosis of the face

407. All of the following are contraindications for performing a lumber tap **except**:
a) Platelet count is 55,000
b) Brain tumor
c) Meningitis with flexion of upper extremities and extension of lower extremities
d) Skin infection at the site of lumber tap
e) Spinal cord tumor

408. The most common cause of elevated opening pressure in CSF is:
a) Bacterial meningitis
b) Viral meningitis
c) Tuberculous meningitis
d) Fungal meningitis
e) Crying constantly

409. The following problems have increased significantly due to the obesity epidemic:
a) Type I diabetes
b) Type II diabetes
c) Hypertension
d) Malignancies
e) Hypercholesterolemia

410. The most common complication of acute hypophosphatemia is:
a) Rhabdomyolysis
b) Acute respiratory failure
c) Slow weaning from the ventilator
d) Proximal muscle weakness
e) Proximal muscle atrophy

411. All of the following are manifestations of severe hypophosphatemia **except**:
a) Cardiac dysfunctions
b) Tremor
c) Seizures
d) Hemolysis
e) Leukocytosis

412. The appropriate metabolic compensation in patients with chronic respiratory alkalosis is:
a) Increased renal alkali excretion
b) Increased renal acid excretion
c) Decreased renal acid excretion
d) Decreased renal alkali excretion
e) Increased renal chloride excretion

413. All of the following statements are true about metabolic acidosis **except**:
  a) The normal respiratory response to metabolic acidosis is compensatory hyperventilation.
  b) When the serum pH is less than 7.20, there are impaired cardiac contractilities and increased risk of cardiac arrythmias.
  c) Acidemia causes potassium to move from the extracellular space to the intracellular space.
  d) Many patients with metabolic acidosis have low serum potassium level due to excessive body losses of potassium.
  e) Acidemia causes pulmonary vasoconstrictions, especially in newborn infants.

414. All of the following therapies are appropriate in patients with Batter syndrome and Gitelman syndrome **except**:
  a) Oral potassium supplementation is indicated in both the syndromes.
  b) Potassium-sparing diuretics are used in both the syndromes.
  c) Children with Gitelman syndrome often require magnesium supplementation.
  d) Children with Batter syndrome often need indomethacin.
  e) Children with Gitelman syndrome need calcium supplementation.

415. All of the following are characteristics of Bartter syndrome and Gitelman syndrome **except**:
  a) Hypokalemia
  b) Metabolic alkalosis
  c) Secondary hyperaldosteronism
  d) High blood pressure
  e) High urine chloride

416. The mode of inheritance in patients with Bartter syndrome or Gitelman syndrome is:
  a) Autosomal recessive
  b) Autosomal dominant
  c) X-linked recessive
  d) X-linked dominant
  e) Multifactorial

417. All of the following are clinical features in children with pseudohypoparathyroidism type 1A **except**:
  a) Short stature
  b) Round face
  c) Stocky build
  d) Brachydactyly
  e) Moderate mental retardation is noted in about 80% of cases.

418. The preferred diagnostic test in patients with pseudohypoparathyroidism is:
  a) Measurement of urinary cAMP after infusion of synthetic PTH
  b) Decreased production of PTH
  c) Decreased serum calcium levels
  d) Increased serum phosphorus levels
  e) Decreased serum 1, 25-dihydroxy vitamin D levels

419. A child appears with psychiatric symptoms such as confusion, disorientation, depression, psychosis, and hallucinations. The child is also hypotonic and lethargic. The laboratory test results most likely reveal:
  a) Low serum calcium levels
  b) High serum calcium levels
  c) Low serum magnesium levels
  d) High serum magnesium levels
  e) High serum phosphorus levels

420. The first line of therapy in patients with hypercalcemia is:
  a) Loop diuretic
  b) Calcitonin
  c) Glucocorticoids
  d) Biphosphonates
  e) Hydration with normal saline

421. The most common presentation in hospitalized patients with hypomagnesemia is:
a) Asymptomatic
b) Constipation
c) Diarrhea
d) Rickets
e) Arrythmias

422. All of the following are manifestations of hypomagnesemia **except**:
a) Tetany
b) Tall T waves
c) Positive Chvostek sign
d) Positive Trousseau sign
e) Seizures

**Match the following syndromes with different conditions (423-424):**

423. Gitelman syndrome
424. Bartter syndrome

a) Hypocalciuria
b) Hypercalciuria

425. The most common cause of transient hypomagnesemia in newborn is:
a) Idiopathic
b) IUGR
c) Mother treated for preeclampsia
d) Post exchange transfusions
e) Infant of diabetic mother

426. All of the following medications can cause respiratory alkalosis **except**:
a) Salicylate intoxication
b) Theophylline
c) Estrogen
d) Progesterone
e) Exogenous catecholamines

**Match the all of the following conditions that cause metabolic alkalosis and their mechanism of actions (427-429):**

427. Salicylates poisoning
428. Sepsis
429. Pain

a) Cytokine mediated
b) Psychogenic hyperventilation
c) Directly stimulate the respiratory center.

430. The most common cause of all unintentional cause of death in children under 1 year of age is:
a) Motor vehicle accident
b) Suffocation
c) Drowning
d) Homicide
e) Fire and burn

431. The most common cause of injury death in all children over 1 year of age is:
a) Homicide
b) Suicide
c) Drowning
d) Motor vehicle accidents
e) Suffocation

432. All of the following are indications for hospitalization in burn patients **except**:
   a) Burn to hands, feet, genitals
   b) Inhalation injury regardless of the size of the burn
   c) High tension wire electrical burn
   d) Suspected child abuse or neglect
   e) Burns involve 9-10% of the body surface area

433. All of the following therapies are indicated in children with burns greater than 15% of body surface area **except**:
   a) Initially, oral fluid therapy is given before IV hydration.
   b) Lactated Ringer solution (10-20 mL/kg/hour) is given initially.
   c) Consultation with specialized burn unit is indicated.
   d) All inhalation injuries need IV access to control fluid intake.
   e) All high-tension and electrical injuries need IV access to provide forced alkaline diuresis to avoid myoglobinuric renal damage.

434. The pain management in patients with sickle cell anemia includes all of the following **except**:
   a) Generous dosing of opiods and NSAIDs at home are indicated.
   b) Treatment of breakthrough pain in a day-treatment program or clinic is preferred than in the ER or hospital admission.
   c) Self-care and maintenance of normal activities are indicated.
   d) Teaching of biobehavioral techniques and coping strategies before cycle develops involving positive experience with health care workers.
   e) The use of ketorolac may decrease the need for the total doses of opoids and avoid hospitalizations.

**Match the following syndromes with chromosomes (435-436):**

435. Prader-Willi syndrome
436. Angelman syndrome

   a) Maternally derived chromosome 15
   b) Paternally derived chromosome 15

**Match the following inborn errors of amino acid metabolisms with abnormal urine odors (437-440):**

437. Isovaleric acidemia
438. Maple syrup urine disease
439. Oasthouse urine disease
440. Trimethylaminuria

   a) Hops-like
   b) Rotting fish
   c) Maple syrup
   d) Sweaty feet, acrid

**Match all of the skin manifestations in newborns with the diagnosis (441-444):**

441. Mongolian spots
442. Lanugo
443. Erythema toxicum
444. Pustular melanosis

   a) Skin lesions appear at birth as vesiculopustular eruption on the neck, back, chin, palms, soles, and extremetries. Skin lesions contain neutrophils and last 2-3 days.
   b) Skin lesions appear 1-3 days after birth as small, white, occasionally vesicopustular papules on an erythematous base on the face, trunk, and extremities. Skin lesions contain eosinophils and last up to 1 week.
   c) Skin lesions appear at birth as slate blue, well demarcated areas of pigmentation on the buttocks and back. Skin lesions disappear within the first year.
   d) Fine, soft, immature hair on the scalp, brow, and face in premature infants.

**Match all the clinical findings with different diagnosis (445-449):**

445. Johanson-Blizzard syndrome
446. Spina bifida
447. Ehlers-Danlos syndrome
448. Amniotic band
449. Osteogenesis imperfecta

a) Excessive skin fragility
b) Face clefts
c) Aplasia cutis congenita
d) Wormian bones
e) Tufts of hair over the lumbosacral spine

450. A routine newborn physical examination reveals an enlarged scrotum. The transillumination is positive. The rest of the examination is unremarkable. The most likely diagnosis is:
a) Inguinal hernia
b) Femoral hernia
c) Hydrocele
d) Testicular torsion
e) Torsion of the spermatic cord

**Match all the clinical findings with the different clinical conditions (451-453):**

451. Sinus bradycardia in neonates
452. Sinus bradycardia after neonatal period
453. Supraventricular tachycardia in neonates

a) Heart rate is 231 beats/minute
b) Heart rate is less than 90 beats/minute.
c) Heart rate is less than 60 beats/minute.

454. A routine physical examination in a full-term newborn reveals heart rate 90 beats/minute during sleeping. The newborn is asymptomatic. The next step in management is:
a) Cardiology consultation
b) EKG
c) Sepsis work up
d) Chest x-ray
e) Reassurance

455. A routine physical examination of a newborn infant reveals heart rate 180 beats/minute during crying. The newborn is asymptomatic. The next step in management is:
a) EKG
b) Cardiology consultation
c) Chest x-ray
d) Sepsis work up
e) Reassurance

456. The most common cause of abdominal mass in newborn infants is:
a) Pancreatic cyst
b) Hydronephrosis
c) Adrenal hemorrhage
d) Hepatoblastoma
e) Intestinal duplication

457. All of the following conditions can cause renal vein thrombosis in infants **except**:
a) Dehydration
b) Asphyxia
c) Sepsis

d) Polycythemia
e) Increased level of antithrombin III

458. The Apgar evaluation in a newborn infant includes all of the following **except**:
a) Color
b) Respiratory effort
c) Heart rate
d) Reflex irritation
e) Eyes blinking

459. A newborn is intubated for respiratory distress. A physical examination reveals the decreased breath sounds on the right side of the chest wall. The most likely diagnosis is:
a) Left diaphragmatic hernia
b) Right pneumothorax
c) Left pneumothorax
d) Dextroxardia
e) Complete collapse of the right lung

460. A 14-day-old breast-fed infant appears with jaundice. His serum bilirubin level is 19 mg/dL. Mother is A(+)ve, baby is B(+)ve and Coombs (–)ve. The most likely diagnosis is:
a) 'ABO' incompatibility
b) G6PD deficiency
c) Rh incompatibility
d) Congenital spherocytosis
e) Breast-feeding jaundice

461. The serum glucose level is 20 mg/dL in a 1-hour-old newborn girl of a diabetic mother. She is asymptomatic. The next step in management is:
a) Intravenous $D_{10}$ glucose water
b) Oral feeding with $D_5$ glucose water
c) Intravenous $D_5$ glucose water
d) Intravenous $D_5$ 0.45 (half normal saline)
e) Reassurance

462. The serum glucose level is 50 mg/dL in 1-hour-old asymptomatic newborn boy of diabetic mother. The next step in management is:
a) Oral feeding with formula as soon as possible
b) Oral feeding with $D_5$ glucose water
c) Intravenous $D_5$ glucose water
d) Intravenous $D_{10}$ glucose water
e) Oral feeding with breast milk after 3 hours

463. A child appears in the ER with aspiration of a button battery. The next step in management is:
a) Chest x-ray AP view
b) Chest x-ray lateral view
c) ENT consultation after the chest x-ray results
d) Observation for 24 hours
e) Removal of the battery as quickly as possible

464. A child appears in the ER with aspiration of a coin. The child is asymptomatic. The flat surface of the coin is visible in the anteroposterior view and the edge of the coin is visible in the lateral view. The next step in management is:
a) Removal of the coin immediately
b) Observe for up to 24 hours
c) Observe for up to 48 hours
d) MRI study of the neck and upper part of the thoracic cavity
e) Intravenous glucagon

465. A child appears in the ER with meat impactions in the esophagus. The child is asymptomatic. He has no problems in handling the secretions. The next step in management is:
a) Meat should be removed immediately
b) Chest x-ray AP-view
c) Chest x-ray lateral view
d) Observation for up to 12 hours
e) Observation for up to 48 hours

466. A symptomatic child appears in the ER with aspiration of a plastic material. The plain x-ray appears unremarkable. The next step in management is:
a) Remove the plastic material
b) Barium contrast study of the esophagus
c) MRI study of the esophagus
d) CT scan study of the upper chest areas
e) Observation for 24 hours

467. A child appears with right lower quadrant pain, followed by nausea, vomiting, and fever for the last 6 hours. A physical examination reveals tenderness at the McBurney point, rigidity over the rectus muscle, presence of rebound tenderness, and mild abdominal distension. The next step in management is:
a) Call pediatric surgeon
b) CT scan of the abdomen
c) Barium enema
d) Upper GI series
e) Ultrasonography of the abdomen

468. A child developed fever and right lower quadrant pain 24 hours after appendectomy. A physical examination reveals tenderness and redness in the right lower quadrant of the abdomen. The next step in management is:
a) CT scan of the abdomen
b) Ultrasonography of the abdomen
c) Needle aspiration of the affected area
d) Laparatomy
e) Barium enema

469. A full-term newborn appears with thick meconium stain. Her Apgar scores are 2 and 8 at 1 and 5 minutes respectively. The meconium is removed from the oropharynx. However, no meconium is visualized below the vocal cord. Most likely, this child will develop:
a) Meconium aspiration
b) Transient tachypnea of the newborn
c) Pneumothorax
d) Pneumomediastinum
e) No meconium aspiration

470. A full-term newborn male developed seizure activities secondary to perinatal asphyxia. A physical examination reveals absence of Moro reflex and tendon reflexes. There is presence of hypotonia, and extension of both upper and lower extremities. Most likely, the newborn will develop:
a) Normally
b) Cerebral palsy
c) Intraventricular hemorrhage
d) Subdural bleeding
e) Epidural bleeding

471. A child is receiving digoxin and furosemide for a long period of time. The most likely complication is:
a) Hyperkalemia
b) Hypokalemia
c) Metabolic acidosis
d) Hypercalcemia
e) Hypernatremia

472. All of the following are complications of furosemide therapy **except**:
   a) Ototoxicity
   b) Hypouricemia
   c) Hypercalciuria
   d) Ischemic hepatitis
   e) Photosensitivity

473. All of the following are complications of digoxin therapy **except**:
   a) Bradycardia
   b) Ototoxicity
   c) Diplopia
   d) Yellow or green vision
   e) Depression

474. The following electrolyte abnormalities enhances digoxin toxicity:
   a) Hyperkalemia and hypocalcemia
   b) Hypernatremia and hypocalcemia
   c) Hyponatremia and hypomagnesemia
   d) Hypomagnesemia and hypocalcemia
   e) Hypokalemia and hypercalcemia

**Match all the fetal conditions and appropriate therapies (475-479):**

475. Parvovirus infection and hydrops
476. HIV-AIDS (mother)
477. Prevention of neural tube defects
478. Meconium-stained amniotic fluid
479. Lung immaturity

   a) Zidovudine (AZT) and protease inhibitors
   b) Folate
   c) Intrauterine P-RBCs transfusion
   d) Betamethasone
   e) Amnioinfusion

480. A routine newborn physical examination reveals petechiae of the skin of the head and neck. The newborn is delivered by NSVD and remains asymptomatic. The next step in management is:
   a) Head ultrasonography
   b) Sepsis work up
   c) Rule out isoimmune thrombocytopenia
   d) Reassurance
   e) Intravenous immunoglobulin therapy

481. A skull x-ray of newborn infant reveals linear fracture. She is asymptomatic. The next step in management is:
   a) Neurology consultation
   b) Head ultrasonography
   c) Head MRI
   d) Elevation of the skull bones
   e) Reassurance

482. A skull x-ray of the newborn infant reveals severely depressed fracture. He is asymptomatic. The next step in management is:
   a) Reassurance
   b) Neurology consultation
   c) Head MRI
   d) Head ultrasonography
   e) Elevation of the depressed skull bones

483. A routine newborn physical examination reveals the Ping-Pong ball sensation over the right parietal bone. The most likely diagnosis is:
a) Linear fracture of the skull
b) Depressed fracture of the skull
c) Craniosynostosis
d) Intraventricular hemorrhage
e) Subarachnoid hemorrhage

484. The use of narcan in newborns is contraindicated in the following condition:
a) Mother received morphine before delivery
b) A severely depressed newborn at birth
c) Mother is addicted to opiates
d) A full-term newborn who is receiving gentamicin therapy.
e) A newborn who is receiving artificial ventilation.

485. All of the following are clinical manifestations of a newborn whose mother received narcotics before delivery **except**:
a) Cyanosis
b) Weak cry
c) Slow to breathe
d) Hypertonic
e) Hypotonic

486. A mother received morphine shortly before the delivery of her newborn infant. The infant appears cyanotic, hypotonic, lethargic, and apneic. The therapy includes all of the following **except**:
a) Oxygen
b) Tactile stimulation
c) Bag and mask ventilation
d) Narcan
e) CNS stimulant drugs

487. In multifactorial inheritance, the risk of recurrence for the next child of unaffected parents with one affected child is:
a) Between 1-2%
b) Between 3-5%
c) Between 6-8%
d) Between 9-12%
e) 25%

488. When a mother is balanced 21/21 translocation carrier, the risk of recurrence of Down syndrome in children is:
a) 10%
b) 25%
c) 50%
d) 66%
e) 100%

489. The congenital deformity most commonly occurs in the following system:
a) CNS
b) Cardiac
c) Pulmonary
d) Gastrointestinal
e) Musculoskeletal

490. The most common extrinsic cause of a fetal deformity is:
a) Small uterus
b) Bifid uterus
c) Breech presentation
d) Fetal crowding
e) Small maternal pelvis

491. The external fetal deformity most commonly occurs during:
   a) Early half of 1st trimester
   b) Late half of 1st trimester
   c) Early half of 2nd trimester
   d) Late half of 2nd trimester
   e) 3rd trimester

492. The risk of recurrence in talipes equinovarus is:
   a) 1-2%
   b) 3-5%
   c) 6-9%
   d) 10-15%
   e) 16-25%

493. All of the following are features of Costello syndrome **except**:
   a) Mental retardation
   b) Microcephaly
   c) Cerebral atrophy
   d) Cardiomyopathy
   e) Papillomas

494. All of the following are features of Kabuki syndrome **except**:
   a) Prominent fingertip pads
   b) Cardiac anomaly
   c) Short palpebral fissures
   d) Mental retardation
   e) Protuberant ears

495. The current cutoff for duration of rupture membrane that increases the risk of neonatal infections is longer than:
   a) 6 hours
   b) 12 hours
   c) 18 hours
   d) 20 hours
   e) 24 hours

496. All of the following conditions are indications of intrapartum penicillin prophylaxis **except**:
   a) GBS bacteriuria during current pregnancy
   b) Previous infant with an invasive GBS disease
   c) Positive GBS screening culture during current pregnancy
   d) Maternal GBS status is unknown and rupture membrane is more than 18 hours.
   e) Previous pregnancy with a positive GBS screening culture

497. The most commonly reported illicit drug ever used by adolescents is:
   a) Marijuana
   b) Cocaine
   c) Ecstasy
   d) Heroin
   e) Amphetamine

498. All of the following are clinical manifestations of alcohol ingestion **except**:
   a) CNS stimulations
   b) Euphoria
   c) Impaired short-term memory
   d) Epigastric pain
   e) Guiac-positive stools

499. An adolescent is considered a problem drinker. All of the following statements indicate problem drinker **except**:
   a) He was drunk 5 times in the past year.
   b) He has problems with school authorities.

c) He has driven after drinking.
d) He has been criticized by dates for drinking habits.
e) He has problem with his friends

500. A 16-year-old boy appears in the ER at 4 AM. He has alcoholic aroma in his breath. He is severely depressed, disoriented, lethargic, and unresponsive. His serum alcohol level is 65 mg/dL. The pupils are normal in sizes and react to light normally. The funduses appear normal. The most likely cause of his depression is:
a) Alcohol overdose syndrome
b) Psychiatric illness
c) Cerebral hemorrhage
d) Brain tumor
e) Ingestion of other drugs along with alcohol

501. The usual mechanism of death from the alcohol overdose syndrome is:
a) Cardiac failure
b) Cerebral hemorrhage
c) Acute GI bleeding
d) Respiratory depression
e) Encephalopathy

502. The preferred therapy in patients with blood alcohol level 450 mg/dL is:
a) Charcoal through OG tube
b) Ipecac
c) Charcoal enema
d) Dialysis
e) Phenobarbital

503. The hallucinogenic properties of marijuana is due to:
a) Benzoyl ecgonine
b) Acetaldehyde
c) Dihydrocannabinol
d) Trihydrocannabinol
e) Tetrahydrocannabinol

504. An "amotivational" syndrome occurs most likely due to the following drug:
a) Toluene intoxication
b) Cocaine use
c) Amphetamine use
d) Phencyclidine use
e) Chronic marijuana use

505. A 17-year-old girl appears in the ER with euphoria, impairment of short-term memory, distortion of time perception, visual hallucination and recall of frightening hallucinations. The most likely diagnosis is:
a) Metamphetamine use
b) Cocaine use
c) Marijuana use
d) Opiate overdose syndrome
e) Lysergic acid diethylamide use

506. All of the following are features of marijuana intoxication **except**:
a) Hypothermia
b) Tachycardia
c) Systolic hypertension
d) Diastolic hypertension
e) Increased intraocular pressure

**Match the following drug interactions with marijuana and their effects (507-509):**

507. Diazepam
508. Cocaine
509. Propranolol

a) Antagonistic effect
b) Potentiate sedation
c) Potentiate stimulation

**Match all the diseases with clinical manifestations (510-514):**

510. Wiskott-Aldrich syndrome
511. Ataxia-telangiectasia
512. Cartilage hair hypoplasia
513. Omenn syndrome
514. Hyper IgE syndrome

a) Recurrent staphylococcal abscesses, persistent pneumatoceles, and coarse facial features.
b) Chronic sinopulmonary disease and a high incidence of cancer
c) Prolonged bleeding from circumcision sites, bloody diarrheas, atopic dermatitis, and S. pneumoniae infections
d) Fatal varicella infections, redundant skin, hyperextensible joints of the hands and feet but an inability to extend the elbow completely.
e) Intractable diarrhea, exfoliative erythroderma, hepatosplenomegaly, and lymphadenopathy

515. The most common cause of eosinophilia in the USA is:
a) Hyper IgE syndrome
b) Inflammatory bowel disease
c) Trichinosis
d) Eosinophilic leukemia
e) Allergy

516. The most common cause of hypereosinophilic syndrome is:
a) Idiopathic
b) Malignancy
c) Allergy
d) Immunodeficiency disease
e) Helminth infections

517. The most serious and life-threatening complication of hypereosinophilic syndrome is:
a) Brain involvement
b) Cardiac involvement
c) Pulmonary involvement
d) Hepatic involvement
e) Splenic involvement

518. The preferred initial therapy in patients with hypereosinophilic syndrome is:
a) Hydroxyurea
b) Alpha-interferon
c) Corticosteroids
d) Methotrexate
e) Partial exchange transfusion

519. All of the following are diagnostic criteria of hypereosinophilic syndrome **except**:
a) Eosinophilia greater than 1,500 cells/micro L persisting more than 1 year.
b) Eosinophilia greater than 1,500 cells/micro L persisting more than 6 months.
c) Lack of another diagnosis to explain the eosinophilia
d) Signs of organ involvements
e) Symptoms of organ involvements

520. The curative therapy in patients with chronic granulomatous disease is:
- a) Interferon-gamma
- b) Amphotericin B
- c) Prednisone
- d) Trimethoprim-sulfamethoxazole
- e) Bone marrow transplantation

521. The curative therapy in patients with Chediak-Higashi syndrome is:
- a) High-dose ascorbic acid
- b) High-dose vitamin A
- c) Interferon-gamma
- d) Interferon-alpha
- e) Bone marrow transplantation

**Match all the different diseases with the laboratory tests (522-526)**:

522. Chediak-Higashi syndrome
523. Leukocyte adhesion deficiency-1 (LAD-1)
524. Leukocyte adhesion deficiency-2 (LAD-2)
525. Myeloperoxidase deficiency
526. Chronic granulomatous disease

- a) Histochemical analysis reveals deficiency of neutrophils and monocytes enzyme.
- b) Dihydrorhodamine 123 fluorescence (DHR) test detects oxidant productions.
- c) Wright-stained blood films reveal large inclusions in all nucleated blood cells.
- d) Lack of sialyl-Lewis X on the neutrophils
- e) Flow cytometric measurements of surface CD1 1b in stimulated and unstimulated neutrophils using monoclonal antibodies directed against CD1 1b.

527. All of the following are physical examination findings in patients with allergic rhinitis **except**:
- a) Continuous open-mouth breathing
- b) Dark circles under eyes
- c) Longitudinal nasal crease
- d) Dental malocclusions
- e) Abnormal facial developments

528. A 10-year-old girl appears with nasal congestion, sneezing, itching, clear rhinorrhea, conjunctival irritation, loss of sense of smell, and difficulty in sleeping. A nasal examination reveals all of the following **except**:
- a) Bluish mucous membranes
- b) Purulent nasal secretions
- c) Swollen turbinates
- d) Edematous mucous membranes
- e) Mildly erythematous mucous membranes

529. All of the following are effective prevention strategies in patients with allergic rhinitis **except**:
- a) For animal allergens in the home, the only effective measure is removal of the pet.
- b) HEPA filters reduce the airborne mold spores.
- c) Sealing the mattresses, pillows, and covers with allergen-proof encasing
- d) Bed linen and blankets should be washed every week in hot water (125°F)
- e) Air conditioning lowers the pollen exposure.

530. The majority of patients with allergic rhinitis have:
- a) Otitis media
- b) Tonsillopharyngitis
- c) Asthma
- d) Obstructive sleep apnea
- e) Secondary bacterial infections

**Match all of the following medications and their effects on glucocorticoids metabolism and clearance (531-534):**

531. Phenytoin
532. Rifampin
533. Ketoconazole
534. Erythromycin

a) Delays glucocorticoid clearance
b) Enhances glucocorticoid clearance
c) Increases glucocorticoid metabolisms
d) Delays glucocorticoid metabolisms

535. The following statements is true about long-term inhaled glucocorticoids therapy and its effect on growth:
a) Long-term inhaled glucocorticoid therapy has no effect on adult attained height.
b) Long-term inhaled glucocorticoid therapy decreases the adult height by 2.5 cm.
c) Long-term inhaled glucocorticoid therapy increases the adult height b 2.5 cm.
d) Long-term inhaled glucocorticoid therapy decreases the adult height by 5.0 cm.
e) Long-term inhaled glucocorticoid therapy increases the adult height by 5.0 cm.

536. The most likely cause of oral thrush due to inhaled glucocorticoids is:
a) Generalized immunosuppression
b) Local immunosuppression
c) Uncleaned oral cavity
d) Direct irritation of the oral mucous membranes
e) Predisposing oral ulcers

537. All of the following are adverse effects of frequently administered beta-agonist therapy in patients with severe asthma **except**:
a) Irritability
b) Tachycardia
c) Tremor
d) Hypokalemia
e) Hyponatremia

538. The following monitoring is indicated when patients with severe asthma those who are receiving beta-agonist therapy frequently:
a) Urine output
b) Blood pressure
c) Temperature
d) EKG
e) Pulse oximetry

539. The important side effect of intravenous magnesium sulfate therapy in patients with asthma is:
a) Hypotension
b) Hypertension
c) Constipation
d) Sedation
e) Respiratory stimulation

540. All of the following therapies are indicated in hospitalized patients with an acute severe asthma attack **except**:
a) Oxygen
b) Inhaled beta-agonist
c) Systemic glucocorticoid
d) Fluids at or slightly below maintenance
e) Fluids above maintenance

541. A severely asthmatic patient is receiving oxygen, inhaled beta-agonist, and systemic glucocorticoid therapies. The child is intubated because of respiratory failure. All of the following therapies are useful in this patient **except**:
a) Intravenous beta-agonist
b) Intravenous theophylline
c) Heliox

d) Intramuscular magnesium sulfate
e) Intravenous magnesium sulfate

542. All of the following therapies are given in patients with acute asthma attacks in the ER **except**:
a) Oxygen
b) Systemic glucocorticoids
c) Subcutaneous epinephrine may be given
d) Inhaled beta-agonist
e) Heliox

543. All of the following measures can reduce the development of asthma **except**:
a) Influenza vaccine
b) Healthy diet
c) Breast feeding more than 4 months
d) Active life style
e) Avoid environmental tobacco smoke beginning prenatally

544. All of the following are adverse effects of chronic systemic glucocorticoid therapy **except**:
a) Dermal thinning
b) Cataracts
c) Glaucoma
d) Increased skin fragility
e) Increased IgG levels

545. The following statements is not true about beta-lactum hypersensitivity reactions:
a) Patients with late-onset morbilliform rashes with amoxicillin require skin testing before penicillin therapy.
b) If a patient needs penicillin and has past history of pencillin allergy, skin testing should be performed to determine the presence of penicillin-specific IgE with both the major and minor determinants of penicillin.
c) If a patient has history of penicillin allergy and needs cephalosporin, skin testing should be performed.
d) If a patient has history of IgE-mediated reaction to cephalosporin and needs penicillin, skin testing should be performed.
e) Aztreonam (monobactam) can be used safely in most penicillin-allergic patients.

546. In addition to high spiking temperature (104°F or higher) that is remittent and unresponsive to antibiotics therapy, all of the following clinical manifestations can make the diagnosis of acute febrile phase of Kawasaki disease **except**:
a) Polymorphous, vesicular rash primarily over the trunk
b) Bilateral bulbar conjunctival injection, generally nonpurulent
c) Strawberry tongue, injected oropharynx, injected and/or dry fissured lips
d) Edema and/or erythema of the hands or feet
e) Cervical lymphadenopathy, 1.5 cm or more, usually unilateral

547. All of the following are clinical manifestations of subacute phase of Kawasaki disease **except**:
a) Periungual desquamation of the fingers and toes
b) Thrombocytosis
c) Development of coronary aneurysms
d) Conjunctival injection
e) Normal ESR (erythrocyte sedimentation rate)

548. The following laboratory finding is usually **not** present in patients with Kawasaki disease during the first week of illness:
a) Thrombocytosis
b) Elevated ESR
c) Normal or elevated WBC counts
d) Normocytic anemia
e) Elevated neutrophils and bands count

549. A child is diagnosed to have Kawasaki disease. The 1st echocardiogram is performed on the 5th day of illness when the diagnosis is made. The echocardiogram result is normal. The next step in management is :
a) No more echocardiogram is needed.
b) The 2nd echocardiogram should be performed after 2-3 weeks of illness.
c) The 2nd echocardiogram should be performed after 4-6 weeks of illness.

d) The 2nd echocardiogram should be performed after 6-8 weeks of illness.
e) The 2nd echocardiogram should be performed after 1 year of illness.

550. A child has Kawasaki disease and coronary artery aneurysms. The next step in management is:
a) Repeat echocardiogram after 1 week
b) Coronary angiography
c) Thallium scan
d) Follow-up chest x-ray daily
e) Consult with a pediatric cardiologist

551. A child appears with fever, weight loss, myalgias, arthralgia, chronic sinusitis, hemoptysis, hematuria, and proteinuria. The most likely diagnosis is:
a) Tuberculosis
b) Wegener granulomatosis
c) DIC
d) HIV-infection
e) Churg-Strauss syndrome

552. The most common organism responsible for toxic shock syndrome is:
a) S. aureus
b) S. epidermidis
c) Group A Streptococcus
d) Group B Streptococcus
e) Pseudomonas aeruginosa

553. A child appears with sudden onset of high fever (more than 38.8°C), vomiting, diarrhea, sore throat, and followed by diffuse erythematous macular rash (sunburn-like or scarlatiniform). A physical examination reveals hypotension, altered level of consciousness, and strawberry tongue. The most likely diagnosis is:
a) Toxic shock syndrome
b) Kawasaki disease
c) Group A Streptococcus infection
d) Pseudomonas infection
e) AIDS

554. The most common risk factor in women with toxic shock syndrome is:
a) Menstruation and tampon use
b) Multiple sexual partners
c) HIV-infection
d) Candida infection
e) Ectopic pregnancy

555. The preferred initial antibiotic therapy in patients with toxic shock syndrome is:
a) Gentamicin
b) Ampicillin
c) Nafcillin
d) Ceftriaxone
e) Clindamycin

**Match all food with food proteins (556-559):**

556. Peanut
557. Egg
558. Cow's milk
559. Fish

a) Paralbumin
b) Casein
c) Ovomucoid
d) Vicilin

560. All of the following recommendations are useful in prevention of food allergies **except**:
    a) Avoid seafood until 3 years of age
    b) Avoid egg until 18-24 months of age
    c) Avoid cow's milk until 9 months of age
    d) Promotion of breast feeding with maternal exclusion of nuts
    e) Promotion of breast feeding with maternal exclusion of peanuts

561. The following side effect can occur due to the **prolonged use** of acetaminophen:
    a) Hepatic injury
    b) Renal injury
    c) GI injury
    d) Pancreatic injury
    e) CNS injury

562. The **massive overdose** of acetaminophen can produce:
    a) Renal injury
    b) Hepatic injury
    c) CNS injury
    d) GI injury
    e) Pancreatic injury

563. All of the following drugs can cause neutropenia **except**:
    a) Penicillins
    b) Phenothiazines
    c) Sulfonamides
    d) Anticonvulsants
    e) Gentamicin

564. The following finding is **not** present in patients with Kostmann syndrome:
    a) Monocytosis
    b) Eosinophilia
    c) Neutrophilia
    d) Anemia
    e) Recurrent, severe pyogenic infections

565. The following finding is **not** present in patients with Shwachman-Diamond syndrome:
    a) Constipation
    b) Failure to thrive
    c) Delayed puberty
    d) Neutropenia
    e) Metaphyseal chondrodysplasia

566. The following finding is **absent** in patients with cartilage-hair hypoplasia:
    a) Short stature
    b) Short limbs
    c) Very fine, thin hair
    d) Neutropenia
    e) Microcytic anemia

567. The most common organism isolated in patients with neutropenia is:
    a) Group A Streptococcus
    b) Staphylococcus epidermidis
    c) Group B Streptococcus
    d) Streptococcus pyogenes
    e) Staphylococcus aureus

568. Leukoencephalopathy is a clinical syndrome characterized by all of the following **except**:
    a) Ataxia
    b) Slurred speech

c) Seizures
d) Dysphagia
e) Decorticate posturing

569. The most common cause of fatal motor vehicle crashes between 16-19 years of age is:
a) Speeding
b) Driver error
c) Alcohol
d) Three passengers
e) Less frequently use of seat belts

570. The leading causes of morbidity and mortality in adolescents are:
a) Automobile and motorcycle accidents
b) Firearm and drowning
c) Fall and suffocation
d) Poisoning and drowning
e) Drowning and suffocation

571. Obesity is correlated with all of the following diseases **except**:
a) Hypercholesterolemia
b) Diabetes insipidus
c) Gallbladder disease
d) Hypertension
e) Arthritis

572. The body mass index (BMI) of a child is 86th percentile. The most likely interpretation is:
a) Underweight
b) Normal weight
c) Overweight
d) Moderately obese
e) Severely obese

573. The following chemical changes may be associated with suicide:
a) Low levels of serotonin 5-HT (hydroxytryptamine)
b) High levels of testosterone
c) High levels of dehydrotestosterone
d) Low levels of prolactin
e) Low levels of hypothalamic releasing hormone

574. All of the following are risk factors of suicide **except**:
a) Substance abuse
b) Gay youth
c) Bisexual youth
d) Heterosexual youth
e) Parent-child conflict

575. The cause of chronic fatigue syndrome is:
a) Unknown
b) Influenza
c) Anemia
d) Undiagnosed UTI
e) Infectious mononucleosis

576. The most common life-threatening emergency of the gastrointestinal tract in newborns is:
a) Malrotation
b) Volvulus
c) Stress ulcer
d) Hirschsprung disease
e) Necrotizing enterocolitis

577. The most common cause of necrotizing enterocolitis is:
   a) Multifactorial
   b) Aggressive feeding
   c) E. coli infection
   d) Thickened formula feeding
   e) Hypoxic damage to intestine

578. The first signs of NEC are:
   a) Gastric retention with abdominal distension
   b) Guiac-positive stools with vomiting
   c) Portal venous gas with abdominal distension
   d) Pneumatosis intestinalis with Guiac-positive stools
   e) Vomiting and thickening of bowel wall

579. The preferred diagnostic study in patients with NEC is:
   a) Upper GI series
   b) Barium enema
   c) Abdominal CT scan
   d) Plain abdominal x-ray
   e) Abdominal MRI

580. The radiological sign that indicates a severe disease in patients with NEC is:
   a) Paralytic ileus
   b) Edema of bowel wall
   c) Portal vein gas
   d) Air-fluid levels
   e) Pneumatosis intestinalis

581. A 6-day-old preterm infant develops gastric retension, abdominal x-ray reveals pneumatosis intestinalis. The management includes all of the following **except**:
   a) NPO and intravenous fluids
   b) Orogastric decompression
   c) Blood culture
   d) Coagulation profile
   e) Keep umbilical catheters for ABC, CBC, and SMA-6 monitoring

582. After the initial diagnosis of NEC, the preferred diagnostic study to detect perforation is:
   a) Anteroposterior abdominal x-ray
   b) Abdominal CT scan
   c) Abdominal MRI
   d) Abdominal paracentesis
   e) Cross-table lateral abdominal x-ray

583. The indication for surgery in patients with NEC is:
   a) Neutropenia
   b) Perforation
   c) Thrombocytopenia
   d) Gross bloody stools
   e) Metabolic acidosis

584. The cause of an idiopathic focal intestinal perforation in newborns is:
   a) Steroids
   b) Aminophylline
   c) Gentamicin
   d) Hypoxia
   e) Vancomycin

585. The clinical features of acute form of kernicterus during phase **1 (1st 1-2 days)** are all of the following **except**:
   a) Poor sucking
   b) Seizures
   c) Stupor
   d) Hypotonia
   e) Hypertonia

586. The clinical features of chronic form of kernicterus **during the first year** are all of the following **except**:
   a) Hypotonia
   b) Delayed motor skills
   c) Seizures
   d) Obligatory tonic neck reflexes
   e) Active deep tendon reflexes

587. The clinical features of chronic form of kernicterus **after first year** are all of the following **except**:
   a) Choreoathetosis
   b) Ballismus
   c) Upward gaze
   d) Tremor
   e) Mixed hearing loss

588. All of the following therapies are effective in hyperbilirubinemia **except**:
   a) Phototherapy
   b) Tin (Sn)-protoporphyrin
   c) Intravenous immunoglobulin
   d) Exchange transfusion with PRBCs
   e) Exchange transfusion with whole blood

589. A 7-day-old boy develops a dark grayish brown discoloration of the skin while undergoing phototherapy. The following statement is most appropriate about this infant:
   a) The boy has only indirect hyperbilirubinemia.
   b) The boy has only direct hyperbilirubinemia.
   c) The boy has both direct and indirect hyperbilirubinemias.
   d) The discoloration is due to intensive phototherapy and dehydration.
   e) The color usually disappears within 24 hours after discontinuation of phototherapy.

590. All of the following clinical manifestations are indications of packed red blood cells transfusion **except**:
   a) Asymptomatic infant with hemoglobin 7.1, hematocrit 21, and absolute reticulocyte count 100,000 cells/μL
   b) Infant required moderate mechanical ventilation (mean airway pressure 9 cm $H_2O$ and $Fio_2$ more than 40%), hemoglobin 10.9, and hematocrit 34
   c) Infant required minimal mechanical ventilation ($Fio_2$ 35%), hemoglobin 9.7, and hematocrit 29
   d) Infant required supplemental oxygen (35%), heart rate 182 per minute, hemoglobin 7.9, and hematocrit 24
   e) Infant required nasal CPAP (continuous airway positive pressure, $Fio_2$ 38%), respiratory rate 82 per minute, hemoglobin 7.8, and hematocrit 24

591. The following drugs can cause gynecomastia **except**:
   a) Digoxin
   b) Furosemide
   c) Thiazides
   d) Cimetidine
   e) Omeprazole

592. The most common organism in CSF shunt infections is:
   a) Staphylococcus aureus
   b) Staphylococcus epidermidis
   c) E. coli
   d) Streptococcus pneumoniae
   e) Neisseria meningitidis

593. The most common organism is **distal** infections of VP shunt is:
   a) Gram-negative organisms
   b) S. aureus
   c) S. epidermidis
   d) S. pneumoniae
   e) S. haemolyticus

594. The most common clinical manifestation in patient with a **distal** shunt infection is:
   a) Abdominal symptoms
   b) Neurologic symptoms
   c) Cardiac symptoms
   d) Pulmonary symptoms
   e) Endocrine abnormalities

595. The most common organism in wound infections of the VP shunt is:
   a) S. aureus
   b) S. epidermidis
   c) E. coli
   d) S. saprophyticus
   e) S. pneumoniae

596. All of the following precautions can prevent infections due to urethral catheter **except**:
   a) Duration of use should be minimized
   b) Prophylactic antibiotics should be used.
   c) Casual use of catheter should be avoided.
   d) Antibiotic-impregnated urinary catheters reduces the rate of infection.
   e) Silver-impregnated urinary catheters lowers the rate of infection.

597. The most common organism in patients with a long-term implanted orthopedic prosthesis is:
   a) Pseudomonas aeruginosa
   b) Candida albicans
   c) S. epidermidis
   d) E. coli
   e) Streptococcus pneumoniae

598. The most common organism in children with osteomyelitis is:
   a) Pseudomonas aeruginosa
   b) S. epidermidis
   c) S. aureus
   d) S. pneumoniae
   e) E. coli

599. The most common organism in children with suppurative arthritis is:
   a) S. epidermidis
   b) E. coli
   c) Pseudomonas aeruginosa
   d) S. aureus
   e) Streptococcus pneumoniae

600. The specific laboratory test to diagnose toxic shock syndrome is:
   a) Positive urine culture
   b) Positive blood culture
   c) Positive CSF culture
   d) Positive wound culture
   e) No specific laboratory test

601. A physical examination of the newborn male reveals a “fish mouth” meatus of the distal urethra and normally developed foreskin. The most likely diagnosis is:
   a) Epispadius

b) Urethral stricture
c) Hypospadius
d) Meatal stenosis
e) Penile torsion

602. A 17-year-old boy recently immigrated to the USA. A physical examination reveals distal hypospadius. He is asymptomatic and is sexually active. The next step in management is:
a) Renal ultrasonography
b) Immediate surgical repair
c) VCUG
d) Reassurance
e) Surgical repair after 1 month

603. The preferred technique to repair a cleft lip is:
a) W-plasty
b) M-plasty
c) N-plasty
d) A-plasty
e) Z-plasty

**Match all of the following diagnosis and clinical manifestations (604-608):**

604. Phenytoin therapy
605. Vitamin D-dependent rickets
606. Neutrophil chemotactic deficiency
607. Immunosuppression
608. Kidney failure

a) Enamel hypoplasia
b) Juvenile periodontitis
c) Facial dysmorphology
d) Oral candidiasis
e) Gingival enlargement

609. The most common cause of premature loss of **primary teeth** is:
a) Vitamin D-dependent rickets
b) Nutritional rickets
c) Hypoparathyroidism
d) Hypothyroidism
e) Premature eruption of permanent teeth

**Match the different conditions and teeth discoloration (610-612):**

610. Porphyria
611. Neonatal hyperbilirubinemia
612. Tetracycline

a) Brown-yellow discoloration
b) Blue to black discoloration
c) Red-brown discoloration

613. All of the following may be complications of natal/neonatal teeth **except**:
a) Pain
b) Abrasion of nipple
c) Aspiration
d) Riga-Fede disease
e) Easy to feed solid food

614. Delayed eruption of the primary teeth may be due to all of the following conditions **except**:
   a) Hypothyroidism
   b) Hypopituitarism
   c) Cleidocranial dysplasia
   d) Progeria
   e) Turner syndrome

615. Pyloric atresia is associated with the following condition:
   a) Down syndrome
   b) Epidermolysis bullosa
   c) Duodenal atresia
   d) Congenital adrenal hyperplasia
   e) Infant of diabetic mother

616. A full term newborn is delivered by NSVD. Maternal history of polyhydramnios. Aspiration of infant's stomach reveals 20 mL of bile stained gastric fluid. The most likely diagnosis is:
   a) Normal condition
   b) H-type TE fistula
   c) Swallowed amniotic fluid
   d) High intestinal obstruction
   e) Low intestinal obstruction

617. A high intestinal obstruction is usually associated with the following condition:
   a) Metabolic acidosis
   b) Respiratory acidosis
   c) Hypochloremic metabolic alkalosis
   d) Hyperchloremic metabolic alkalosis
   e) Hypochloremic metabolic acidosis

618. A newborn is diagnosed with an intestinal obstruction. All of the following findings suggest bowel infarction **except**:
   a) Leukocytosis without thrombocytopenia
   b) Leukocytosis with thrombocytopenia
   c) Metabolic acidosis
   d) Hematochezia
   e) Leukopenia with thrombocytosis

619. The most common clinical manifestation in patients with portal hypertension is:
   a) Ascites
   b) Jaundice
   c) Palmar erythema
   d) Vascular telangiectasia
   e) Bleeding from esophageal varices

620. An infant is admitted for liver transplantation. Pretransplantation management includes all of the following **except**:
   a) Medium-chain triglycerides
   b) Nocturnal nasogastric tube feedings
   c) Intravenous nutrition, especially lipids
   d) Vitamin A, D, E, and K
   e) Caloric requirements up to 120 Kcal/kg/day

621. All of the following immunizations should be given in children prior to hepatic transplantation **except**:
   a) Hepatitis A
   b) Hepatitis B
   c) Varicella
   d) MMR
   e) Hepatitis C

622. Early complications after hepatic transplantation include all of the following **except**:
   a) Electrolyte imbalance
   b) Renal dysfunction
   c) Hypertension
   d) Fluid shifts
   e) Bacterial infections

623. The most ominous early problem after hepatic transplantation is:
   a) Hypertension
   b) Acute hypotension
   c) Ascites
   d) Renal failure
   e) Thrombosis of graft vessels

624. The most common infection after hepatic transplantation is:
   a) Bacterial
   b) CMV
   c) Adenovirus
   d) Candida albicans
   e) Pneumocystis carinii

**Match the following organs and their predominance in hematopoiesis in different gestational ages (625-627):**

625. Liver
626. Yolk sac
627. Bone marrow

a) 2 to 6 weeks
b) 6 to 24 weeks
c) 24 to 42 weeks

**Match the following drugs and their side effects (628-632):**

628. Diazoxide
629. Hydrochlorthiazide
630. Enalaprilat
631. Labetalol
632. Prazocin

a) First dose, orthostatic hypotension
b) Transient hypotension
c) Bronchospasm
d) Hyperuricemia
e) Hyperglycemia

633. The principal effect of vasopressin on the kidney is via the following receptor:
   a) V1 receptors
   b) V2 receptors
   c) V3 receptors
   d) V4 receptors
   e) V5 receptors

634. The human V2 receptor gene is located on the following chromosome:
   a) Short arm of the X chromosome
   b) Long arm of the X chromosome
   c) Short arm of the Y chromosome
   d) Long arm of the Y chromosome
   e) Chromosome 21

635. The most common cause of thyroid disease in children and adolescents is:
a) Lymphocytic thyroiditis
b) Endemic goiter
c) Iodide goiter
d) Subacute nonsuppurative thyroiditis
e) Acute suppurative thyroiditis

636. The most common cause of acquired hypothyroidism is:
a) Iodine deficiency
b) Congenital goiter
c) Iodide goiter
d) Simple goiter
e) Lymphocytic thyroiditis

637. The most common cause of sporadic goiter is:
a) Lithium carbonate
b) Lymphocytic thyroiditis
c) Hyperthyroidism
d) Amiodarone
e) Thyroid cyst

638. A 14-year-old girl is diagnosed with Graves disease. A physical examination reveals apical systolic murmur. The most likely diagnosis is:
a) Tricuspid regurgitation
b) Tricuspid stenosis
c) Mitral regurgitation
d) Mitral stenosis
e) Aortic stenosis

639. A 9-year-old boy is diagnosed with Graves disease. All of the following laboratory findings are noted in patients with Graves disease **except**:
a) Elevated serum levels of thyroxine ($T_4$)
b) Decreased serum levels of thyroid stimulating hormone (TSH)
c) Elevated serum levels of triiodothyronine ($T_3$)
d) Elevated serum levels of free $T_3$ and free $T_4$
e) Absence of thyroid receptor-stimulating antibody (TRSAb)

640. The radiographic finding in very young children with Graves disease is:
a) Delayed skeletal maturation
b) Craniotabes
c) Increased bone density
d) Decreased bone density after therapy
e) Advanced skeletal maturation

641. All of the following syndromes produce craniostenosis **except**:
a) Dandy-Walker syndrome
b) Carpenter syndrome
c) Apert syndrome
d) Kleeblattschadel syndrome
e) Crouzon disease

**Match the different causes of cataract and different manifestations of cataract (642-646):**

642. Corticosteroids
643. Wilson disease
644. Infantile galactosemia
645. Persistent strands of the pupillary membrane
646. Persistent remnants of the primitive hyaloid vascular system

a) Sunflower cataract
b) Posterior Subcapsular cataract
c) Anterior capsular cataract
d) Zonular type cataract
e) Posterior capsular cataract

647. Opthalmologic examination of an infant reveals a cluster of tiny vacuoles in the distribution of the Y sutures of the lens. This type of cataract is most likely noted in:
a) Premature infants
b) Toxoplasmosis
c) Congenital rubella
d) CMV infection
e) Infant of diabetic mother

648. All of the following conditions can cause cataract **except**:
a) Child abuse
b) Trauma
c) Radiation
d) Atopic dermatitis
e) Hypercalcemia

649. All of the following conditions can cause congenital lens opacities **except**:
a) Parvovirus B19 infection
b) Hypoglycemia
c) Congenital syphilis
d) Infants of diabetic mothers
e) Infants of prediabetic mothers

650. The drug of first choice for uncomplicated acute otitis media is:
a) Amoxicillin
b) Amoxicillin-clavulanate
c) Cefuroxime axetil
d) Azithromycin
e) Trimethoprim-sulfamethoxazole

651. The drug of choice for acute otitis media in patients who are allergic to beta-lactams is:
a) Erythromycin
b) Azithromycin
c) Cefuroxime axetil
d) Ceftriaxone
e) Trimethoprim-sulfamethoxazole

652. A child is diagnosed to have acute otitis media. He did not respond to amoxicillin therapy. The drug of choice is:
a) Azithromycin
b) Erythromycin
c) Trimethoprim-sulfamethoxazole
d) Cefotaxime
e) Amoxicillin-clavulanate

653. The most common side effect of using amoxicillin-clavulanate, especially in infants and young children is:
 a) Nausea
 b) Vomiting
 c) Constipation
 d) Diarrhea
 e) Pyloric stenosis

654. The children do not like to ingest cefuroxime-axetil because:
 a) It has an unattractive color.
 b) It has a bad smell.
 c) It has a bad taste.
 d) It causes diarrhea.
 e) It causes nausea.

655. The second-line drugs for acute otitis media should be effective against all of the following organisms **except**:
 a) Beta-lactamase producing strains of H. influenzae
 b) M. catarrhalis
 c) Susceptible strains of S. pneumoniae
 d) Most nonsusceptible strains of S. pneumoniae
 e) Staphylococcus aureus

656. A child appears in ER with multiple vesiculobulous lesions on the face, trunk, and extremities for the last 24 hours. His mother stated that initially he had a flulike upper respiratory illness, burning sensation, edema, and erythema of the lips and buccal mucosa. The lesions also involve eyes and oral cavity. He refused to eat and drink. Mother denies history of drug intake. The lesions have a central necrosis. The management must include all of the following **except**:
 a) Opthalmologic consultation
 b) Prophylactic systemic antibiotics
 c) Topical anesthetics
 d) Mouthwashes and glycerin oral swabs
 e) Denuded skin lesions are cleansed with saline or Burrow solution compresses.

657. All of the following infections agents can cause Stevens-Johnson syndrome. The most convincingly identified infectious agent is:
 a) Herpes simplex virus
 b) Epstein-Barr virus
 c) Group A streptococci
 d) Enteroviruses
 e) Mycoplasma pneumoniae

658. All of the following drugs can produce Stevens-Johnson syndrome **except**:
 a) Captopril
 b) Etoposide
 c) Allopurinol
 d) Vancomycin
 e) Nonsteroidal anti-inflammatory agents

659. A child appears with multiple painful oral ulcers for the last 2 months. The most likely diagnosis is:
 a) Dermatitis herpetiformis
 b) Bullous pemphigoid
 c) Linear IgA dermatosis
 d) Pemphigus foliaceus
 e) Pemphigus vulgaris

660. Marcus Gunn phenomenon involves the following cranial nerves:
 a) Facial and abducens nerves
 b) Trigeminal and oculomotor nerves
 c) Facial and glossopharyngeal nerves
 d) Abducens and vagus nerves
 e) Optic and olfactory nerves

661. Mobius syndrome includes all of the following **except**:
  a) Mental retardation
  b) Bilateral facial weakness
  c) Abducens nerve paralysis
  d) Dull facies
  e) Hypoplasia of brainstem nuclei

662. All of the following syndromes can cause microcephaly **except**:
  a) Down syndrome
  b) Cri-du-chat syndrome
  c) Edward syndrome
  d) Turner syndrome
  e) Cornelia de Lange syndrome

663. The most common cause of obstructive or noncommunicating hydrocephalus is:
  a) Subarachnoid hemorrhage
  b) Vein of Galen malformation
  c) Tuberculous meningitis
  d) Pneumococcal meningitis
  e) Aqueductal stenosis

664. The most common cause of nonobstructive or communicating hydrocephalus is:
  a) Leukemic infiltrates
  b) Subdural hemorrhage
  c) Subarachnoid hemorrhage
  d) Pneumococcal meningitis
  e) Tuberculous meningitis

**Match the following conditions with different findings (665-667):**

665. Dandy-Walker malformation
666. Chiari malformation (type II)
667. Aqueductal stenosis

  a) Foreshortened occiput, cerebellar tonsils protruding downward into the cervical canal
  b) Prominent occiput, large posterior fossa cyst
  c) Large head, dilated lateral ventricles

668. All of the following feature are usually present in patients with Chiari malformation (type I) **except**:
  a) Hydrocephalus
  b) Urinary frequency
  c) Recurrent headache
  d) Neck pain
  e) Progressive lower extremity spasticity

669. A toddler appears with history of sudden onset of ataxia, refuses to walk, nausea, and vomiting. The child experienced a similar attack during the physical examination. The physician noted horizontal nystagmus. The attack lasted for about 1 minute. The child appears frightened and pale but is able to verbalize without lethargy, drowsiness, and loss of consciousness. The most likely diagnosis is:
  a) Simple syncope
  b) Breath-holding spells
  c) Prolonged QT syndrome
  d) Shuddering attacks
  e) Benign paroxysmal vertigo

670. A 2-year-old girl appears with history of a loss of consciousness, generalized cyanosis, clonic jerky movements, and opisthotonos. She had two episodes within 1 hour. The child was upset before the episode. She had a brief, shrill cry before the apneic episodes. The preferred therapy is:
  a) Diphenhydramine

b) Atropine
c) Propranolol
d) Phenytoin
e) Reassurance

671. A child wakes up shortly after the onset of sleep with coughing paroxysm. He is plethoric, frightened, and agitated, followed by loss of consciousness, clonic muscle contractions, vertical upward gaze, generalized flaccidity, and urinary incontinence. He recovered within seconds and consciousness is restored within a few minutes. Mother denies a prior episode. He is a known asthmatic. The most likely diagnosis is:
a) Seizure disorder
b) Cyanotic spells
c) Pallid spells
d) Simple syncope
e) Cough syncope

672. The most important causes of significant headache in children are the following **except**:
a) Refractive errors
b) Stress
c) Migraine
d) Psychologic factors
e) Increased intracranial pressure

673. The most prevalent type of migraine in children is:
a) Common migraine
b) Complicated migraine
c) Migraine variants
d) Classic migraine
e) Idiopathic

**Match the different types of migraine and their clinical manifestations (674-677):**

674. Common migraine
675. Classic migraine
676. Migraine variants
677. Complicated migraine

a) The child develops neurologic signs (e.g., diplopia, third-nerve palsy, or hemiplegia) during a headache that persist after termination of the headache.
b) The child develops cyclic vomiting (i.e., recurrent bouts of severe vomiting, sometimes monthly) or appears with confusion, disorientation, hyperactivity, unresponsiveness, vomiting, lethargy, and memory disturbances.
c) The child has history of throbbing or pounding headache either unilateral, bifrontal or temporal regions. The headache is associated with severe nausea and vomiting. The migraine is not associated with an aura. A strong family history, especially on the maternal side.
d) The child has history of an aura (e.g., blurred vison, scotoma, flashes of light) before the onset of headache. The child has distortions of body image, perioral paresthesia, and numbness of the hands and feet. After the aura, the child appears with clinical manifestations that is described in item (c).

678. The treatment for migraine may include all of the following medications **except**:
a) Acetaminophen
b) Ibuprofen
c) Dimenhydrinate
d) Chlorpromazine
e) Monosodium glutamate

679. The mode of inheritance of patients with tuberous sclerosis is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive

d) X-linked dominant
e) Multifactorial

680. The hallmark of neurofibromatosis (NF-1) is:
a) Optic glioma
b) Sphenoid dysplasia
c) Iris Lisch nodules
d) Café-au-lait spots
e) A first-degree relative with NF-1

681. The most distinctive finding in neurofibromatosis (NF-2) is:
a) Bilateral acoustic neuromas
b) Posterior subcapsular cataracts
c) Skin neurofibromas
d) A sibling with NF-2
e) A parent with NF-2

682. The most common orthopedic manifestation of neurofibromatosis (NF-1) is:
a) Scoliosis
b) Lordosis
c) Kyphosis
d) Sphenoid dysplasia
e) Cortical thinning of long bones

683. The preferred therapy in patients with port-wine stain is:
a) Cryotherapy
b) Excision
c) Excision and skin grafting
d) Interferon-alpha
e) Flashlamp-pulsed laser therapy

684. A child has Sturge-Weber disease. He has normal mental development. His seizure activities are well-controlled with anticonvulsant medication. The preferred therapy for this patient is:
a) Hemispherectomy
b) Conservative
c) Frontal lobectomy
d) Parietal lobectomy
e) Temporal lobectomy

685. A 10-year-old boy with Down syndrome suddenly develops neck pain, head tilt, and gait abnormalities. A physical examination reveals weakness, hyperreflexia, and spasticity. The preferred therapy is:
a) Intravenous immunoglobulin
b) Intravenous ceftriaxone
c) Intravenous cefuroxime
d) Low-dose intravenous methylprednisolone
e) High-dose intravenous methylprednisolone

686. A lateral x-ray of the neck in a patient with Down syndrome reveals a distance of 4.0 mm between the odontoid process of the axis and the anterior arch of the atlas. The most likely diagnosis is:
a) The child has atlantoaxial instability.
b) The child has instability between C2 and C3 vertebrae.
c) The child has instability between C3 and C4 vertebrae.
d) The child has instability between C4 and C5 vertebrae.
e) The child has no atlantoaxial instability.

687. A routine physical examination of a newborn reveals lipoma in the midline of the lower back. The most likely diagnosis is:
a) Syringomyelia
b) Spinal cord tumor
c) Diastematomyelia

d) Tethered cord
e) Syringobulbia

688. A 16-year-old girl appears with low back pain and paresthesias of the lower extremities for the last 24 hours. She experienced a viral infection prior to this episode. She also has sphincter disturbances. A physical examination reveals weak and flaccid lower extremities; a sensory level in the midthoracic region; decreased pain, temperature, and light touch sensations; normal vibration sense and joint position. CSF study reveals moderate lymphocyte pleocytosis and a normal protein level. The most likely diagnosis is:
a) Spinal cord tumor
b) Guillain-Barre syndrome
c) Epidural abscess
d) Transverse myelitis
e) Devic disease

689. All of the following infections can cause transverse myelitis **except**:
a) Herpes
b) Epstein-Barr virus
c) Varicella
d) Chlamydia trachomatis
e) Mycoplasma pneumoniae

**Match the different diseases with different opthalmologic examination findings (690-694):**

690. Retinopathy of prematurity
691. Retinoblastoma
692. Retinitis pigmentosa
693. Tuberous sclerosis
694. Diabetic retinopathy

a) Retinal phakomas
b) Neovascularization and proliferation of fibrovascular tissue on the retina, extending into the vitreous.
c) Progressive retinal degeneration characterized by pigmentary changes, arteriolar attenuation, some degree of optic atrophy
d) White pupillary reflex and strabismus
e) Ridge formation, extraretinal vascular tissue

695. The preferred therapy in patients with infantile glaucoma is:
a) Furosemide
b) Acetazolamide
c) Topical steroid therapy
d) Systemic steroid therapy
e) Surgery

696. The classic triad of signs and symptoms in patients with infantile glaucoma include:
a) Corneal edema, photophobia, and visual impairment
b) Epiphora, photophobia, and visual impairment
c) Corneal enlargement, photophobia, and conjunctival injection
d) Epiphora, corneal edema, and photophobia
e) Epiphora, photophobia, and blepharospasm

697. The most common tumor of the optic nerve in children is:
a) Optic nerve glioma
b) Optic nerve Lipoma
c) Optic nerve neuromas
d) Optic nerve meningioma
e) Optic nerve blastoma

698. A child is diagnosed with juvenile-onset (insulin-dependent) diabetes mellitus and heterodegenrative optic atrophy. The most likely associated condition is:
a) Cardiac anomaly

b) Nephrotic syndrome
c) Hepatic abnormalities
d) Herpes infection
e) Sensorineural hearing loss

699. The most common benign tumor of the orbit is:
a) Lipoma
b) Fibroma
c) Neuroma
d) Osteoma
e) Hemangioma

700. The malignant tumors of the orbit include all of the following **except**:
a) Rhabdomyosarcoma
b) Lymphosarcoma
c) Adenocarcinoma
d) Extension of retinoblastoma
e) Metastatic neuroblastoma

701. The most common hip disorder in adolescent is:
a) Transient synovitis
b) Legg-Calve-Perthes disease
c) Septic arthritis
d) Osteomyelitis
e) Slipped capital femoral epiphysis

702. The most common form of scoliosis is:
a) Congenital
b) Traumatic
c) Bone tumor
d) Spinal cord tumor
e) Idiopathic

703. A routine physical examination of a patient reveals idiopathic scoliosis 50 degrees. The preferred therapy is:
a) Observation
b) Bracing
c) Physical exercise
d) Reevaluation after 6 months
e) Surgery

704. The school screening examination for scoliosis is:
a) Asymmetric shoulder height
b) Asymmetric waist line
c) Asymmetric elbow-to-flank distance
d) Vertebral rotation
e) Asymmetry of the posterior chest wall on forward bending

705. The preferred diagnostic study in patients with idiopathic scoliosis is:
a) MRI
b) CT scan
c) Supine posteroanterior x-ray
d) Prone posteroanterior x-ray
e) Standing posteroanterior x-ray

706. All of the following statements are true regarding treatment of idiopathic scoliosis **except**:
a) The progressive adolescent scoliosis are usually treated with bracing and surgical correction.
b) The chiropractic therapy can improve the outcome of scoliosis.
c) Most orthopedic surgeons recommend a trial of brace therapy for immature patients with curves less than 40 degrees.

- d) Bracing does not correct curvature but can improve Cobb angle during active brace therapy.
- e) Surgical therapy is indicated when curves greater than 45 degrees.

707. The preferred therapy in patients with clavicular fracture is:
- a) Shoulder cast
- b) Internal fixation
- c) Open reduction
- d) Arm and shoulder cast
- e) Figure-of-eight clavicle strap

708. The most common type of elbow dislocation is:
- a) Anterior dislocation
- b) Posterior dislocation
- c) Superior dislocation
- d) Inferior dislocation
- e) Lateral dislocation

709. The mechanism of supracondylar humeral fracture is:
- a) Falling backward onto the outstretched arm with the elbow flexed
- b) Falling forward onto the outstretched arm with the elbow flexed
- c) Falling backward onto the outstretched arm with the elbow extended
- d) Falling laterally onto the flexed arm with the elbow flexed
- e) Falling laterally onto the extended arm with the elbow extended

710. The most common coexisting injury in patients with supracondylar humeral fracture is:
- a) Median nerve injury
- b) Radial nerve injury
- c) Ulnar nerve injury
- d) Brachial artery injury
- e) Compartment syndrome

711. During the initial evaluation of the injured extremity, the first priorities are to maintain:
- a) Nerve and skeletal stability
- b) Nerve and muscle stability
- c) Muscle and skeletal stability
- d) Nerve and vascular stability
- e) Vascular and skeletal stability

712. The most common site of epiphyseal injury is:
- a) Proximal radius
- b) Distal radius
- c) Proximal tibia
- d) Distal tibia
- e) Distal femur

713. A patient has shoulder injury and complains of radiating pain down the arm. The most likely associated injury is at the site of:
- a) Proximal humerous
- b) Distal humerous
- c) Clavicle
- d) Scapula
- e) Neck

714. A 16-year-old boy appears with a history that his shoulder had "popped out of place" while playing football. He was tackling another player only with his arm. The most likely diagnosis is:
- a) Posterior dislocation of the shoulder
- b) Anterior dislocation of the shoulder
- c) Fracture of the lateral end of clavicle
- d) Fracture of the proximal humeral bone
- e) Acromioclavicular separation

715. A football player appears in ER with pain in the right shoulder. He collided with another player and the point of contact was the distal part of the right clavicle. A physical examination reveals tenderness at the right acromioclavicular joint and step-off between the distal clavicle and the acromion. The most likely diagnosis is:
   a) Fracture of the proximal humeral bone
   b) Fracture of the distal right clavicle
   c) Fracture of the acromion
   d) Anterior dislocation of the right shoulder
   e) Acromioclavicular separation of the right shoulder

716. All of the following statements are true about atlantoaxial instability (AAI) **except**:
   a) About 40% of patients younger than 21 years of age with Down syndrome have AAI.
   b) Symptomatic AAI is rare in patients with Down syndrome
   c) Asymptomatic AAI is not a risk factor for symptomatic AAI.
   d) Special Olympics require atlantoaxial x-ray in asymptomatic individuals with Down syndrome.
   e) All symptomatic patients (i.e., upper motor neuron or posterior column dysfunction) should be evaluated with radiographs.

717. All of the following are features of sports-related heat stroke **except**:
   a) Dry, hot skin
   b) Altered mental status
   c) Related to intense exertion
   d) Profuse sweating
   e) Body temperature is more than 104°F

718. The therapy for patients with heat stroke includes all of the following **except**:
   a) Removal of excess clothing
   b) Ice water bathing
   c) Airway
   d) Breathing
   e) Intravenous fluid should be given at a rate of 500 $mL/m^2$ in the first hour with dextrose and saline solution.

719. All of the following measures can prevent sports-related dehydration and heat illness **except**:
   a) Athletes should be well hydrated before participation in sports.
   b) Athletes should drink every 20 minutes during sports.
   c) Athletes should have free access to cold water.
   d) Salt pills should be used to avoid hyponatremia.
   e) Fluid (i.e., electrolytes and carbohydrate) should be reserved for sports lasting more than 1 hour.

720. Amenorrheic athletes have an increased risk of the following condition than their eumenorrheic athletic peers:
   a) Heart problems
   b) Uterine abnormalities
   c) Ovarian abnormalities
   d) Osteopetrosis
   e) Osteopenia

721. The treatment for hypothalamic amenorrhea in athletes includes all of the following **except**:
   a) Reduced exercise
   b) Increased energy intake
   c) Increased calcium intake
   d) Increased vitamin D intake
   e) Estrogen replacement therapy

722. The current recommended daily allowance for calcium in women with amenorrhea is:
   a) 1200 mg/day
   b) 1500 mg/day
   c) 1800 mg/day
   d) 2000 mg/day
   e) 2200 mg/day

723. The following skin infection is a contraindication to wrestling:
   a) Contact dermatitis
   b) Eczema
   c) Herpes simplex
   d) Superficial fungal infections
   e) Staphylococcal furunculosis

724. The most common musculoskeletal injury at the time of preseason examinations is:
   a) Neck injury
   b) Shoulder injury
   c) Elbow injury
   d) Wrist injury
   e) Knee injury

725. A 17-year-old boy has "tennis elbow". The boy has the following injury:
   a) Injury to the medial epicondyle
   b) Injury to the lateral epicondyle
   c) Injury to the anterior part of the elbow
   d) Injury to the posterior part of the elbow
   e) Injury to the elbow caused by tennis ball

**Match the skeletal dysplasias and their associated anomalies (726-730):**

726. Achondroplasia
727. Osteogenesis imperfecta
728. Robinow syndrome
729. Beemer-Langer syndrome
730. Saldino-Noonan

   a) Renal cysts
   b) Hydrocephalus
   c) Omphalocele
   d) Blue sclera
   e) Genital hypoplasia

731. A child appears with cerebellar ataxia, posterior column dysfunction, opthalmoplegia, loss of deep tendon reflexes, and chronic cholestasis. The most likely diagnosis is:
   a) Hepatic encephalopathy
   b) Vitamin A deficiency
   c) Vitamin D deficiency
   d) Vitamin E deficiency
   e) Vitamin K deficiency

732. A 10-year-old girl has vitamin E deficiency. The following laboratory investigation is suggestive of this diagnosis:
   a) The ratio of serum vitamin E to total serum protein 0.4.
   b) The ratio of serum vitamin E to total serum glucose is 1.0.
   c) The ratio of serum vitamin E to total serum lipid is 0.3.
   d) The ratio of serum vitamin E to vitamin D level is 0.9.
   e) The ratio of serum vitamin E to vitamin A level is 0.5.

733. A child appears with a chronic abdominal pain, vomiting, abdominal distension, diarrhea, steatorrhea, and megaloblastic anemia. She underwent intestinal operation a few months prior to this episode. The most likely diagnosis is:
   a) Disaccharidase deficiency
   b) Vitamin $B_{12}$ deficiency
   c) Protein-losing enteropathy
   d) Fat malabsorption
   e) Stagnant loop syndrome

734. The preferred therapy for children with bacterial overgrowth syndrome is:
   a) Ciprofloxacin
   b) Tetracycline
   c) Gentamicin
   d) Colistin
   e) Metronidazole

735. The breast milk has all of the following components **except**:
   a) High levels of IgA
   b) High levels of nucleotides
   c) High levels of leukocytes
   d) High levels of vitamin K
   e) Epidermal growth factor

736. The following complication commonly occurs in infants receiving TPN who had terminal ileal resection:
   a) Renal stones
   b) Gallstones
   c) Venous thrombosis
   d) Vitamin deficiency
   e) Hyperoxaluria

737. The long-term complications of TPN include all of the following findings **except**:
   a) Thrombosis
   b) Hepatotoxicity
   c) S. epidermidis infections
   d) Gallstones
   e) Bleeding

738. A child developed short bowel syndrome after intestinal resection due to volvulus. Enteral feeding started very slowly along with TPN. The child was tolerating enteral feeding well. Suddenly, he develops bloody diarrhea. The most likely diagnosis is:
   a) Recurrence of volvulus
   b) Malrotation
   c) Nectrotizing enterocolitis
   d) Feeding colitis
   e) Large bowel obstruction

739. The celiac disease is due to the following food component:
   a) Lactose
   b) Galactose
   c) Triglycerides
   d) Sucrose
   e) Gluten

740. The most common symptom of celiac disease is:
   a) Failure to thrive
   b) Diarrhea
   c) Irritability
   d) Vomiting
   e) Anorexia

741. The most common sign of celiac disease is:
   a) Wasted muscles
   b) Body weight less than 25th percentile
   c) Abdominal distension
   d) Edema
   e) Height less than 25th percentile

742. The gold standard to make the diagnosis of celiac disease is:
a) Antigliadin IgG antibodies in serum
b) Antigliadin IgA antibodies in serum
c) Antiendomysial antibodies in serum
d) Antibodies to tissue transglutaminase (tTG)
e) Small intestinal biopsy

743. The preferred therapy for patients with celiac disease is:
a) One year gluten-free diet
b) Three years gluten-free diet
c) Six years gluten-free diet
d) Lifelong, strict gluten-free diet
e) Corticosteroids

744. A 10-month-old boy develops perianal abscess. He is otherwise asymptomatic. The preferred therapy is:
a) Incision and drainage
b) Amoxicillin-clavulanate
c) Gentamicin
d) Vancomycin
e) Reassurance

745. A 3-year-old boy appears with perianal abscess. He has a predisposing condition. The therapy includes all of the following **except**:
a) Excision and drainage
b) Antibodies to cover gram-negative bacteria
c) Antibodies to cover Staphylococcus aureus
d) Antibodies to cover fecal anaerobic organism
e) Observation only

746. A 3-year-old girl appears with prolapse of the rectum during defecation. This is the first episode. She has no pain. A physical examination reveals a bright red mass that is 6 cm long protruding through the anus. Neurological examination is normal. The therapy may include all of the following **except**:
a) Surgical placement of a subcutaneous ring-like band in the perianal area.
b) Reduction of protrusion with a gentle pressure with warm compress.
c) Stool softeners in case of constipation
d) Laxative in case of constipation
e) Treatment for intestinal parasites when present

747. A 2-year-old boy appears with procidentia. He had meninomyelocele that was repaired after birth. He has a ventriculoperitoneal shunt. He has procidentia for the last 6 months. The preferred therapy is:
a) Laparotomy and internal fixation of the rectum to the presacral fascia
b) Sclerosing agent
c) Stool softeners
d) Laxative
e) Manual reduction of protrusion

748. The most common cause of malabsorption in white American children is:
a) Biliary atresia
b) Jejunal atresia
c) Duodenal atresia
d) Lactose intolerance
e) Cystic fibrosis

749. The following newborn screening test is used to make the diagnosis of cystic fibrosis:
a) Elevated serum levels of chymotrypsinogen
b) Decreased serum levels of chymotrypsinogen
c) Elevated serum levels of trypsinogen
d) Decreased serum levels of trypsinogen
e) Elevated serum levels of triglyceride

750. The most widely used screening test for malabsorption is:
a) A qualitative examination of the stools for microscopic fat globules.
b) Measurement of stool trypsinogen levels
c) Measurement of stool chymotrypsinogen levels
d) Measurement of stool lipase levels
e) Measurement of stool amylase levels

751. The most commonly used test to determine pancreatic function is:
a) Measurement of stool trypsinogen levels
b) Measurement of stool chymotrypsinogen levels
c) Measurement of stool bicarbonate levels
d) Breath tests to detect $CO_2$ in the expired air
e) Collection and measurement of pancreatic juice after stimulation with secretion and cholecystokinin during endoscopy

752. The most common mechanism of arterial hypoxemia in pulmonary disease is:
a) Ventilation-perfusion mismatch
b) Ventilation failure
c) Perfusion abnormalities
d) Arterial obstruction
e) Venous obstruction

753. All of the following statements are true in infants who are sleeping supine or on their side **except**:
a) They develop less fever at 1 month of age.
b) They develop less stuffy nose at 6 months of age.
c) They have less trouble sleeping at 6 months of age.
d) They have less outpatient visits for ear infection at 1 and 2 months for sleeping supine.
e) They have less outpatient visits for ear infection at 3 months for sleeping on their side.

754. The preferred therapy in patients with antral choanal polyps is:
a) Surgery
b) Intranasal steroid sprays
c) Systemic steroids
d) Local decongestants
e) Systemic decongestants

755. The preferred therapy in patients with nasal polyps is:
a) Intranasal steroid sprays
b) Systemic steroids
c) Local decongestants
d) Systemic decongestants
e) Functional endoscopic sinus surgery

756. The most common organism for common cold is:
a) Coronavirus
b) Adenovirus
c) Influenza virus
d) Rhinovirus
e) Respiratory syncytial virus

757. The most common complication of cold is:
a) Sinusitis
b) Asthma
c) Bronchiolitis
d) Croup
e) Otitis media

758. The best method of prevention of common cold is:
a) Influenza vaccine
b) Vitamin C

c) Echinacea
d) Good handwashing
e) Chicken soup

**Match all the different diseases and their clinical manifestations (759-763):**

759. Pertussis
760. Allergic rhinitis
761. Streptococcal nasopharyngitis
762. Foreign body in nose
763. Sinusitis

a) Persistent or paroxysmal cough
b) Nasal discharge that excoriates the nares
c) Persistent rhinorrhea or cough for more than 10-14 days, headache, facial pain, or periorbital edema
d) Itching, sneezing, and nasal eosinophilia
e) Unilateral, foul-smelling discharge

764. Prolonged use of nasal topical adrenergic medications (e.g., xylometazoline, oxymetazoline, phenylephrine) can produce the following complication:
a) Nasal ulcers
b) Hypertension
c) Tachycardia
d) Irritability
e) Rhinitis medicamentosa

765. A young woman appears with recurrent pneumothorax during menstruation. The investigation of the following organ is indicated:
a) Uterus
b) Fallopian tubes
c) Ovary
d) Vagina
e) Diaphragm

766. The most common organism isolated in patients with pneumothorax, especially in infants is:
a) S. aureus
b) S. epidermidis
c) Streptococcus pneumoniae
d) Pseudomonas aeruginosa
e) Group B Streptococcus

767. The most common cause of chylothorax is:
a) Chest injury
b) Metastatic lung disease
c) Child abuse
d) Thrombosis of thoracic duct
e) Rupture of thoracic duct during cardiac surgery

768. The mode of inheritance in patients with achondroplasia is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

769. The most of inheritance in patients with Jeune syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive

d) X-linked dominant
e) Multifactorial

770. All of the following findings may be present in patients with achondroplasia **except**:
a) Hydrocephalus
b) Adenotonsillar hypertrophy
c) Dilated foramen magnum
d) Reduced vital capacity
e) Muscular upper airway obstruction

771. The preferred therapy for patients with re-stenosis of coarctation of the aorta after earlier surgery is:
a) Aortic stent placement
b) Repeat surgical procedure
c) Antihypertensive agent
d) Balloon angioplasty
e) Small dose of acetyl salicylic acid daily

772. All of the following clinical manifestations are present in newborns with critical pulmonic stenosis **except**:
a) Pulmonary edema
b) Peripheral edema
c) Hepatomegaly
d) Cyanosis
e) Dyspnea

773. All of the following clinical manifestations are present in newborns with critical aortic stenosis **except**:
a) Pulmonary edema
b) Poor perfusion
c) Hepatomegaly
d) Peripheral edema
e) Hypertension

774. The most common cardiac defect in patients with autosomal dominant Holt-Oram syndrome is:
a) PDA
b) ASD
c) VSD
d) Aortic stenosis
e) Pulmonic stenosis

775. The most common cardiac defect in patients with Alagille syndrome is:
a) VSD
b) ASD
c) Mitral regurgitation
d) Tricuspid regurgitation
e) Pulmonary stenosis

776. PHACE syndrome includes all of the following features **except**:
a) **P**osterior brain fossa anomalies
b) **H**emangiomas (facial)
c) **A**rterial anomalies
d) **C**ardiac anomalies and aortic dilatation
e) **E**ye anomalies

777. CATCH 22 syndrome can be associated with the following cardiac defect:
a) Tetralogy of Fallot
b) Transposition of great vessels
c) Total anomalous pulmonary venous return
d) Tricuspid atresia
e) Hypoplastic left heart syndrome

778. CATCH 22 syndrome includes all of the following findings **except**:
a) **C**ardiac defects
b) **A**bnormal facies
c) **T**hymic hypoplasia
d) **C**left lip
e) **H**ypocalcemia

**Match all different postoperative complications with clinical manifestations (779-783):**

779. Phrenic nerve injury
780. Recurrent laryngeal nerve injury
781. Sympathetic nerve chain injury
782. Hyponatremia
783. Spinal artery ischemia

a) Horner syndrome
b) Seizures
c) Diaphragmatic paralysis
d) Vocal cord paralysis
e) Paraplegia

**Match all of the following complications after cardiac surgery with different manifestations (784-788):**

784. Postcoarctectomy syndrome
785. Repair of TAPVR
786. ARDS postpump syndrome
787. SIADH
788. Serous postpericardiotomy syndrome

a) Hyponatremia
b) Hypertension
c) Pericardial tamponade
d) Pulmonary hypertension
e) Possible release of vasoactive substances

789. All of the following statements are true in patients with Wolff-Parkinson-White syndrome **except**:
a) WPW syndrome may be associated with Ebstein anomaly.
b) WPW syndrome is absent in patients with a normal heart.
c) WPW syndrome is usually seen when the patient does not have tachycardia.
d) EKG reveals a short P-R interval and slow upstroke of QRS (delta wave).
e) The anatomic re-entrant circuit are the AV node and an accessory preexcitation pathway consisting of a muscular bridge connecting atrium to the ventricle.

790. The synthetic drug desmopressin (DDAVP) is effective in the following type of von Willebrand disease:
a) Type 1
b) Type 3
c) Type 2B
d) Type 2M
e) Platelet-type pseudo

791. The most common cause for acute onset of thrombocytopenia in otherwise well children is:
a) Bacterial infection
b) Alloimmune etiology
c) Fungal infection
d) Viral infection
e) Idiopathic

792. A 2-year-old boy appears with sudden onset of generalized petechiae and purpura for the last 24 hours. The boy was fine before this episode. He experienced a viral infection 2 weeks ago. A physical examination reveals petechiae and purpura all over the

body. The laboratory test results reveal platelet count is 10,000 but platelet sizes are increased. The rest of CBC results are normal including differential counts. The bone marrow examination reveals increased numbers of megakaryocytes and the rest of the examination is normal. The preferred therapy is:

a) Antibiotics
b) Acyclovir
c) Amphotericin
d) Ribavirin
e) Intravenous immunoglobulin

793. The side effect of IVIG therapy is:

a) Thrombocytosis
b) Polycythemia
c) Leukocytosis
d) Leukopenia
e) Aseptic meningitis

794. The long-term side effects of corticosteroid therapy includes all of the following **except**:

a) Growth failure
b) Diabetes mellitus
c) Osteoporosis
d) Aseptic necrosis of bone
e) Lymphocytosis

**Match the different disorders with cancer/tumor (795-799):**

795. Chromosome 11p deletion
796. Chromosome 13q deletion
797. Dysplastic nevus syndrome
798. Xeroderma pigmentosa
799. Fanconi anemia

a) Squamous cell skin cancer
b) Retinoblastoma
c) Wilms tumor
d) Melanoma
e) Leukemia

**Match all the following viruses with oncogenesis (800-803):**

800. Epstein-Barr virus (EBV)
801. Hepatitis C virus
802. Human herpesvirus 8 (HHV 8)
803. Human papillomaviruses

a) Splenic lymphoma
b) B-cell lymphoproliferative disease
c) Kaposi sarcoma
d) Cervical cancer

804. A newborn with Down syndrome develops high leukocyte counts, blast cells in the peripheral blood, anemia, and thrombocytopenia. A physical examination reveals hepatosplenomegaly. The following statement is true about this patient:

a) The patient needs chemotherapy immediately.
b) The patient should receive chemotherapy after bone marrow examination.
c) A close follow-up is indicated because 70-80% will develop leukemia within 6 months of life.
d) A close follow-up is indicated because 40-60% will develop leukemia within 12 months of life.
e) A close follow-up is indicated because 20-30% will develop leukemia within the first few years of life.

**Match all of the following diseases with brain tumors (805-809):**

805. Cowden syndrome
806. Neurofibromatosis 1
807. Neurofibromatosis 2
808. Tuberous sclerosis
809. von Hippel-Lindau disease

a) Hemangioblastoma
b) Vestibular schwannomas
c) Optic pathway gliomas
d) Subependymal giant cell astrocytomas
e) Dysplastic gangliocytoma of the cerebellum (Lhermitte-Duclos disease)

810. A child appears with ataxia and "dancing eyes and dancing feet". The most likely diagnosis is:
a) Pheochromocytoma
b) Neuroblastoma
c) Medulloblastoma
d) Pituitary tumor
e) Cerebellar astrocytoma

811. The most common site of neuroblastoma is:
a) Brain
b) Neck
c) Chest
d) Abdomen
e) Pelvis

812. The most common sites of metastasis in patients with neuroblastoma are all of the following **except**:
a) Lungs
b) Long bones
c) Skull
d) Bone marrow
e) Liver

813. The following stage refers to children younger than 1 year of age with neuroblastoma is:
a) Stage 1
b) Stage 2
c) Stage 3
d) Stage 4
e) Stage 4S

814. A child appears with abdominal discomfort, proptosis and ecchymoses of both eyes. The preferred diagnostic study is:
a) CT scan of abdomen
b) CT scan of eyes
c) MRI of abdomen
d) Biopsy of tumor tissue
e) Decreased homovanillic acid (HVA) and vanillylmandelic acid (VMA) in the urine

815. A bone marrow examination reveals rosettes of cells surrounding an inner mass of fibrillary material. The most likely diagnosis is:
a) Neuroblastoma
b) Pheochromocytoma
c) Ganglioneuroma
d) Osteosarcoma
e) Chronic myelogenous leukemia

816. A 6-year-old girl appears with lethargy, malaise, abdominal pain, fever, oliguria, and edema for the last 48 hours. She experienced pharyngitis 10 days prior to this episode. A physical examination reveals hypertension, edema, and mild abdominal tenderness. Urinalysis reveals RBCs, RBC cast, polymorphonuclear leukocytes, and proteinuria. The serum C3 level is reduced. All of the following statements are true about this condition **except**:
a) Complete recovery occurs in more than 95% of cases.
b) The risk of recurrence is extremely high.
c) A 10-day course of oral penicillin therapy is recommended to limit the spread of the specific strain of the organism.
d) Antibiotic therapy does not affect the natural history of the disease.
e) The diagnosis must be questioned in patients with chronic renal dysfunction.

817. A 10-year-old boy is diagnosed to have acute poststreptococcal glomerulonephritis. He has acute nephritis syndrome, evidence of recent streptococcal infection, and a low serum C3 level. The boy does not need renal biopsy. However, renal biopsy is indicated in all of the following conditions **except**:
a) Acute renal failure
b) Nephrotic syndrome
c) Absence of evidence for streptococcal infection
d) Abnormal complement levels
e) Persistence of hematuria, proteinuria, diminished renal function and/or a low serum C3 level persist more than 2 months after onset.

818. A 3-year-old girl appears with sudden onset of pallor, weakness, lethargy, irritability, and oliguria for the last 24 hours. She experienced fever, vomiting, diarrhea, and abdominal pain 7 days prior to this episode. A physical examination reveals petechiae, edema, dehydration, marked irritability, and hepatosplenomegaly. The laboratory findings include all of the following results **except**:
a) Microangiopathic hemolytic anemia
b) Positive Coombs test
c) Thrombocytopenia
d) Acute renal failure
e) Leukocytosis

819. The therapy for patients with hemolytic-uremic syndrome includes all of the following **except**:
a) Antithrombotic agent
b) Antihypertensive agent
c) Aggressive nutrition
d) Meticulous management of fluid and electrolytes
e) Early peritoneal dialysis

820. Antibiotic therapy should be avoided in patients with enteritis secondary to E. coli 0157 : H7 because the patient can develop the following complication:
a) Pyloric stenosis
b) Bloody stools
c) NEC
d) Ulcerative colitis
e) Hemolytic-uremic syndrome

821. The following therapy is contraindicated in patients with hemolytic-uremic syndrome caused by Streptococcus pneumoniae:
a) Peritoneal dialysis
b) Plasmaphresis
c) Nutrition
d) Antihypertensive agent
e) Fluid and electrolytes

822. All of the following medications can cause hemorrhagic cystitis **except**:
a) Penicillins
b) Busulfan
c) Thiotepa
d) Cyclophosphamide
e) Acyclovir

823. All of the following conditions can cause transient proteinuria **except**:
   a) Exercise
   b) Dehydration
   c) Congestive heart failure
   d) Seizure
   e) Temperature greater than 100.4°F

824. The most common cause of persistent proteinuria in school-aged children and adolescents is:
   a) Glomerular proteinuria
   b) Tubular proteinuria
   c) Nephrotic syndrome
   d) Acute glomerulonephritis
   e) Orthostatic proteinuria

825. A 9-year-old girl appears with persistent proteinuria that is detected in a routine urinalysis. She is asymptomatic. The preferred method to make the diagnosis is:
   a) Renal scan
   b) VCUG
   c) Renal ultrasonography
   d) Urine culture
   e) Collection of urine in both resting (supine) and active (upright) position, especially a split 24-hour urine collection.

826. The most common cause of nephrotic syndrome in children is:
   a) Membranous nephropathy
   b) Minimal change disease
   c) Focal segmental glomerulosclerosis
   d) Mesangial proliferation
   e) Membranoproliferative glomerulonephritis

827. A 4-year-old boy appears with mild edema around the eyes and lower extremities for the last 24 hours. He also complains of anorexia, diarrhea, and abdominal pain. He has idiopathic nephrotic syndrome. All of the following laboratory findings are suggestive of this disease **except**:
   a) Urinalysis reveals 3+ or 4+ proteinuria
   b) Spot urine protein to creatinine ratio is 1.2
   c) Serum creatinine level is normal.
   d) Serum albumin level is less than 2.5 g/dL.
   e) Serum C3 and C4 levels are normal.

828. All of the following are clinical features of patients with Bartter syndrome **except**:
   a) Triangular facies
   b) Drooping mouth
   c) Small ears
   d) Signs of dehydration
   e) Large eyes with strabismus

829. All of the following are laboratory findings in patients with Bartter syndrome **except**:
   a) Severe hypokalemia
   b) Metabolic alkalosis
   c) Hypercalcuria
   d) Abnormal renal functions
   e) Elevated serum renin, aldosterone, and prostaglandin E levels

830. The therapy in patients with Bartter syndrome includes all of the following **except**:
   a) High dose of potassium
   b) Indomethacin
   c) Adequate hydration
   d) Adequate nutrition
   e) Sodium bicarbonate

831. The mode of inheritance in patients with Bartter syndrome is:
    a) Autosomal recessive
    b) Autosomal dominant
    c) X-linked recessive
    d) X-linked dominant
    e) Multifactorial

832. The most common organism responsible for urinary tract infections (UTIs) is:
    a) Adenovirus
    b) E. coli
    c) Klebsiella
    d) Proteus
    e) Staphylococcus saprophyticus

833. A 16-year-old girl appears with urgency, dysuria, frequency, bladder and pelvic pain. The pain is relieved after voiding. The urine culture is negative. The preferred therapy is:
    a) Ampicillin
    b) Cefotaxime
    c) Gentamicin
    d) Ceftriaxone
    e) Bladder hydrodistension and laser ablation

834. The following statement is **not** true in patients with acute hemorrhagic cystitis:
    a) Rarely caused by E. coli
    b) Adenovirus types 11 and 21 can cause cystitis
    c) Adenovirus cystitis is more common in males than females.
    d) Adenovirus cystitis is a self-limiting condition.
    e) Hematuria lasts about 4 days in patients with adenovirus cystitis.

835. All of the following statements are true about collection of urine to make the diagnosis of UTI **except**:
    a) Urine samples can be kept at room temperature up to 2 hours before plating.
    b) A midstream urine sample is good in toilet-trained children.
    c) In uncircumcised males, prepuce should be retracted before collection of urine samples.
    d) A catheterized specimen is more reliable to diagnose UTI.
    e) In infants, a sterile collection bag specimen can give falsely positive UTI.

836. All of the following statements suggest UTI **except**:
    a) A midstream urine sample reveals greater than 100,000 colonies of E. coli in a symptomatic boy.
    b) A midstream urine sample reveals greater than 10,000 colonies of E. coli in a symptomatic child.
    c) A sterile collection bag urine reveals greater than 100,000 colonies of Klebsiella in an asymptomatic infant.
    d) A catheterized specimen reveals greater than 100,000 colonies of E. coli.
    e) A suprapubic urine sample reveals greater than 10,000 colonies of Klebsiella in a symptomatic child.

837. The side effect of fluroquinolones in children is:
    a) Hepatic damage
    b) Gastric ulcer
    c) Duodenal ulcer
    d) Pancreatitis
    e) Cartilage damage

838. The preferred therapy for patients with E. coli cystitis is:
    a) Nitrofurantoin
    b) Amoxicillin
    c) Pencillin
    d) Azithromycin
    e) Trimethoprim-sulfamethoxazole

839. The preferred therapy for patients with Klebsiella-Enterobacter cystitis is:
   a) Azithromycin
   b) Ampicillin
   c) Penicillin
   d) Erythromycin
   e) Nitrofurantoin

840. The preferred oral therapy for patients with E. coli pyelonephritis is:
   a) Cefixime
   b) Ampicillin
   c) Amoxicillin
   d) Azithromycin
   e) Erythromycin

841. The preferred oral therapy for patients with Pseudomonas pyelonephritis is:
   a) Ciprofloxacin
   b) Nitrofurantoin
   c) Ampicillin
   d) Azithromycin
   e) Erythromycin

842. The preferred intravenous therapy for patients with acute pyelonephritis is:
   a) Ampicillin
   b) Gentamicin
   c) Cefotaxime
   d) Ceftriaxone
   e) Ceftazidime

843. The following medication should **not** be used in children with a febrile UTI:
   a) Ampicillin
   b) Cefixime
   c) Nitrofurantoin
   d) Gentamicin
   e) Trimethoprim-sulfamethoxazole

844. The preferred prophylactic therapy against recurrent UTIs is:
   a) Amoxicillin
   b) Cefalexin
   c) Ampicillin
   d) Erythromycin
   e) Trimethoprim-sulfamethoxazole

845. A child is being treated for UTI. The follow-up urine culture should be performed:
   a) 48 hours after onset of antibiotic therapy
   b) 72 hours after onset of antibiotic therapy
   c) Immediately after the termination of antibiotic therapy
   d) 1 week after the termination of antibiotic therapy
   e) 1 month after the termination of antibiotic therapy

846. A child was treated for UTI. A long-term follow-up urine cultures should be performed regardless of predisposing anatomic abnormalities. The follow-up should be as follows:
   a) Periodically for 6 months, if the child is asymptomatic.
   b) Periodically for 1-2 years, even when the child is asymptomatic.
   c) Periodically for 3-5 years, even when the child is asymptomatic.
   d) Periodically for 6-8 years, even when the child is asymptomatic.
   e) Periodically for 3 months, if the child is asymptomatic.

847. The preferred nonsurgical therapy for boys with persistent physiologic or pathologic phimosis is:
   a) Estrogen cream locally
   b) Progesterone cream locally
   c) Testosterone cream locally
   d) Corticosteroid therapy orally
   e) Corticosteroid cream locally

848. A child appears in ER with pain and swelling of the glans penis. He has phimosis and his father forcefully retracts the foreskin. The preferred therapy is:
   a) Estrogen cream locally
   b) Corticosteroid cream locally
   c) Corticosteroid therapy orally
   d) Lubrication of the foreskin and glans, and then compressing the glans and push the phimotic ring distal to the coronal sulcus.
   e) Emergency circumcision

849. The following disease can cause galactorrhea:
   a) Hypothyroidism
   b) Hyperthyroidism
   c) Hypopituitarism
   d) Hypoparathyroidism
   e) Hyperparathyroidism

**Match different diagnosis with different types of nipple discharge (850-853):**

850. Papilloma
851. Mastitis
852. Galactorrhea
853. Duct ectasia

   a) Purulent
   b) Watery
   c) Bloody
   d) Milky

854. All of the following conditions can cause serous/serosanguineous nipple discharge **except**:
   a) Cancer
   b) Duct ectasia
   c) Fibrocystic changes
   d) Galactorrhea
   e) Intraductal papilloma

855. All of the following features may be present in infants with congenital hypopituitarism **except**:
   a) Apnea
   b) Cyanosis
   c) Hyperglycemia
   d) Seizures
   e) Elevation of both conjugated and unconjugated bilirubins

856. A newborn has normal size and weight at birth. A physical examination reveals round head, short and broad face, prominent frontal bone, small, depressed, and saddle-shaped nose, bulging eyes, underdeveloped chin and mandible, short neck, small hands and feet, and high-pitched cry. The most likely diagnosis is:
   a) Congenital syphilis
   b) Down syndrome
   c) Congenital hypopituitarism
   d) Congenital hypothyroidism
   e) Silver Russell syndrome

857. A child has growth hormone deficiency type 1. This condition can be due to large deletions in growth hormone gene cluster on the following chromosome:
   a) Chromosome 1
   b) Chromosome 7
   c) Chromosome 9
   d) Chromosome 15
   e) Chromosome 17

858. The definitive diagnosis of growth hormone (GH) deficiency can be made by the following test results:
   a) CT scan reveals destroyed sella.
   b) MRI reveals enlarged, ballooning, and calcification of sella.
   c) X-ray skull reveals destroyed sella.
   d) X-ray reveals markedly delayed skeletal maturation.
   e) Peak levels of growth hormone are less than 10 μg/L after two provocative tests.

**Match the different causes of hyponatremia with intravascular volume and urine sodium (859-862):**

859. Pseudohyponatremia
860. SIADH
861. Cerebral salt wasting
862. Systemic dehydration

   a) Low intravascular volume and low urine sodium
   b) Low intravascular volume and very high urine sodium
   c) High intravascular volume and high urine sodium
   d) Normal intravascular volume and normal urine sodium

863. The most common cause of Addison disease is:
   a) Tuberculosis
   b) Hemorrhage
   c) Autoimmune
   d) AIDS
   e) Waterhouse-Friderichsen syndrome

864. The most infectious cause of Addison disease is:
   a) Streptococcus pneumoniae
   b) Meningococcus infection
   c) Staphylococcus aureus
   d) HIV infection
   e) Tuberculosis

865. A newborn infant appears with lethargy, poor feeding, and vomiting. Sepsis work up is performed. Ampicillin and gentamicin are given. He was delivered by forcep delivery with Apgar scores were 2 and 8 at 1 and 5 minutes respectively. CBC results are unremarkable except mildly low hematocrit. The SMA 6 results reveal hypoglycemia, hyponatremia, and hyperkalemia. Blood culture has no growth. Hyperpigmentation of skin is absent. The most likely diagnosis is:
   a) Group B Streptococcus sepsis
   b) Severe perinatal asphyxia
   c) Meconium aspiration syndrome
   d) Phenylketonuria
   e) Adrenal insufficiency

866. In older children with Addison disease, all of the following manifestations are noted early in the course of the disease **except**:
   a) Orthostatic hypotension
   b) Hyponatremia
   c) Hyperkalemia
   d) Hypoglycemia
   e) Ketosis

867. The most definitive test to diagnose primary adrenal insufficiency is:
  a) Elevated serum ACTH levels
  b) Decreased serum aldosterone levels
  c) Presence of hyponatremia, hyperkalemia, hypoglycemia, and ketosis
  d) Decreased serum levels of cortisol before the administration of ACTH but significantly increased levels of cortisol after the administration of ACTH
  e) Decreased serum levels of cortisol before and after the administration of ACTH

868. A child has acute adrenal insufficiency. All of the following statements are true about therapy **except**:
  a) Intravenous administration of 5% glucose with 0.9% saline solution should be given to correct hypovolemia, hyponatremia, and hyperkalemia.
  b) Hydrocortisone sodium succinate should be given intravenously every 6-hour intervals for the first 24 hours.
  c) Fludrocortisone should be given to achieve mineralocorticoid effects.
  d) Severe hyperkalemia is treated with intravenous calcium and/or sodium bicarbonate, intrarectal potassium-binding resin (Kayexalate), or intravenous infusion of glucose and insulin.
  e) Therapy should be started immediately and vigorously.

869. Chronic overdose of fludrocortisone may cause all of the following manifestations **except**:
  a) Tachycardia
  b) Palpitations
  c) Hypertension
  d) Obesity
  e) Occasionally hypokalemia

870. A newborn male appears with abnormally small testes and penis. The most likely diagnosis is:
  a) Primary hypogonadism
  b) Secondary hypogonadism
  c) Down syndrome
  d) Fragile X-syndrome
  e) Pseudohypogonadism

871. A 12-year-old boy appears for a routine physical examination. He has high pitched voice. A physical examination reveals absence of facial, pubic, and axillary hair. He has small penis, scrotum, and testes. He has long extremities. He has fat accumulations in hips and buttocks. The distance from the symphysis pubis to the soles of the feet is much longer than that from the symphysis pubis to the vertex. The following laboratory finding can make the diagnosis:
  a) Low levels of serum FSH
  b) Low levels of serum LH
  c) Low levels of both serum FSH and LH
  d) High levels of both serum FSH and LH
  e) A random plasma testosterone level that is low.

872. The patients with Klinefelter syndrome have increased risk of all of the following conditions **except**:
  a) Breast cancer
  b) Pulmonary disease
  c) Varicose veins
  d) Testicular cancer
  e) Mediastinal germ cell tumors

873. The most common testicular lesions in patients with Klinefelter syndrome are:
  a) Spermatogenic arrest and Sertoli cell predominance
  b) Spermatogenic arrest and absence of Sertoli cells
  c) Spermatogenic arrest and Leydig cell predominance
  d) Spermatogenic arrest and absence of Leydig cells
  e) Normal spermatogenesis and absence of Leydig and Sertoli cells

874. The preferred therapy in patients with Klinefelter syndrome is:
  a) FSH
  b) LH
  c) Estrogen

d) Testosterone
e) Human chorionic gonadotropin

875. An adolescent has diabetes mellitus. He takes insulin regularly. He is going to participate in long distance running competition. The following recommendation appropriate for this boy is:
a) Increased insulin doses by 10%
b) Increased insulin doses by 15%
c) Increased insulin doses by 50%
d) Decreased insulin doses by 15%
e) Decreased insulin doses by 50%

876. The insulin dose may be adjusted during a regular exercise in patients with diabetes mellitus. The usual recommendation is:
a) Decreased insulin doses by 10-15%
b) Decreased insulin doses by 25%
c) Decreased insulin doses by 50%
d) Increased insulin doses by 10-15%
e) Increased insulin doses by 50%

877. All of the following viruses can cause prolonged pancytopenia **except**:
a) Parvovirus B19
b) Herpesviruses
c) CMV
d) Hepatitis viruses
e) Epstein-Barr virus

878. The most common hereditary bleeding disorder is:
a) Hemophilia A
b) Hemophilia B
c) Hemophilia C
d) Factor V deficiency
e) von Willebrand disease

879. A child appears with an acute abdominal pain and petechiae. A physical examination reveals diffuse abdominal tenderness and involuntary guarding. The abdominal x-ray reveals free air. The diagnosis is ruptured acute appendicitis with DIC (disseminated intravascular coagulation). The most specific laboratory finding for activation of coagulation and fibrinolysis is:
a) Fibrin degradation products (FDPs)
b) D-dimers
c) Profound thrombocytopenia
d) Blood smear reveals fragmented, burr, and helmet-shaped RBCs (schistocytes)
e) Prolonged PT and PTT

880. All of the following therapies are indicated in patients with disseminated intravascular coagulation (DIC) **except**:
a) Platelet transfusions for thrombocytopenia
b) Cryoprecipitate therapy for hyperfibrinogenemia
c) Fresh frozen plasma (FFP) is used for replacement of other coagulation factors and natural inhibitors.
d) Activated protein C (APC)
e) Heparin is occasionally effective in patients with DIC.

881. Heparin therapy is **not** indicated in all of the following conditions **except**:
a) DIC associated with purpura fulminans and acute promyelocytic leukemia.
b) Septic shock
c) Massive head injury
d) Heat stroke
e) Snake envenomation

882. A severe preterm infant has bronchopulmonary dysplasia. The infant is not responding to therapy and experiences frequent exacerbations without clear triggers. The most likely associated finding is:
a) Cyanotic heart disease
b) VSD

c) Sinusitis
d) RSV infection
e) Gastroesophageal reflux

883. A severely affected patient with bronchopulmonary dysplasia is usually benefited from a multidisciplinary team of caregivers. They include all of the following specialists **except**:
a) Audiologist
b) Pediatrician
c) Pulmonologist
d) Nutritionist
e) Developmental specialist

884. A 12-year-old girl appears with sudden loss of large amount of hair, often with combing, brushing, and washing of hair. She had appendectomy 2 months prior to this episode. She is doing well in school. A physical examination reveals absence of scalp inflammation. The hair follicles are intact. The most likely diagnosis is:
a) Toxic alopecia
b) Telogen effluvium
c) Trichotillomania
d) Traction alopecia
e) Seborrheic dermatitis

**Match all different diseases with nail findings (885-889):**

885. Rubinstein-Taybi syndrome
886. Nail-patella syndrome
887. Bronchiectasis
888. Plummer-Vinson syndrome
889. Arsenic poisoning

a) Small nails
b) Yellow nails
c) Leukonychia
d) Large nails
e) Koilonychia

**Match all different diseases with findings of tongue and mucous membranes (890-894):**

890. Fusobacterium nucleatum infection
891. Pseudomonas aeruginosa infection
892. AIDS
893. Chronic smoking
894. Vitamin A deficiency

a) Vincent gingivitis
b) Oral hairy leukoplakia
c) Scrotal tongue
d) Black hairy tongue
e) Noma neonatorum

895. A child appears with multiple painful ulcerations on the buccal, lingual, sublingual, and gingival mucosa. The lesions are well demarcated, necrotic ulcers with a gray fibrinous exudates and an erythematous halo. All of the following conditions can produce this manifestation **except**:
a) Herpes simplex virus
b) Vitamin $B_{12}$ deficiency
c) Folate deficiency
d) Trauma
e) Emotional stress

896. The most common organism in patients with blistering distal dactylitis is:
  a) Staphylococcus epidermidis
  b) Pseudomonas aeruginosa
  c) E. coli
  d) Klebsiella
  e) Group A beta-hemolytic Streptococcus

897. The most common organism in patients with sycosis barbae is:
  a) S. aureus
  b) S. epidermidis
  c) Pseudomonas aeruginosa
  d) Proteus
  e) Group A beta-hemolytic Streptococci

898. The most common organism in patients with hot tub folliculitis is:
  a) Pseudomonas aeruginosa
  b) Proteus
  c) S. aureus
  d) E. coli
  e) Klebsiella

899. The most common organism in patients with ecthyma gangrenosa is:
  a) Candida
  b) E. coli
  c) Serratia marcescens
  d) S. aureus
  e) Pseudomonas aeruginosa

900. The most common organism in patients with erythrasma is:
  a) Actinomycetes
  b) Dermatophilus
  c) S. aureus
  d) E. coli
  e) Corynebacterium minutissimum

901. The most common organism in patients with infection secondary to total parenteral infection (TPN) is:
  a) E. coli
  b) S. aureus
  c) S. epidermidis
  d) Group B Streptococcus
  e) Pseudomonas aeruginosa

902. The water intake in term infants on day 1 usually begins at:
  a) 50-60 mL/kg/day
  b) 60-70 mL/kg/day
  c) 70-80 mL/kg/day
  d) 80-90 mL/kg/day
  e) 90-100 mL/kg/day

903. The water intake in term infants by days 2-3 is usually:
  a) 80-90 mL/kg/day
  b) 90-100 mL/kg/day
  c) 100-120 mL/kg/day
  d) 120-130 mL/kg/day
  e) 130-140 mL/kg/day

904. A low birthweight (LBW) infant is receiving greater than 100 kcal/kg/day. The infant is expected to gain weight about:
  a) 10 g/kg/day
  b) 15 g/kg/day

c) 20 g/kg/day
d) 25 g/kg/day
e) 30 g/kg/day

905. A bottle or breast feeding in premature infants usually begins at:
a) 28 wk gestational age
b) 30 wk gestational age
c) 32 wk gestational age
d) 34 wk gestational age
e) 36 wk gestational age

906. The supplementation of following vitamin can reduce bronchopulmonary dysplasia (BPD) in very low birthweight infants:
a) Vitamin A
b) Vitamin $B_2$
c) Vitamin $B_{12}$
d) Vitamin C
e) Vitamin D

907. Breast milk has all of the following advantages **except**:
a) Reduces risk of infants obesity
b) Improves neurodevelopmental outcome
c) Protects from a wide range of infections
d) Reduces risk of sudden infant death syndrome
e) Reduces risk of necrotizing enterocolitis in preterm infants

908. All of the following infants need an eye examination to screen for ROP (retinopathy of prematurity) **except**:
a) A 1250 g infant who did not require oxygen therapy.
b) A 900 g infant who required oxygen therapy for 15 days.
c) A 1490 g infant who did not required oxygen therapy.
d) A 1990 g infant who had unstable clinical course and required oxygen therapy.
e) A 2010 g infant who had unstable clinical course and required oxygen therapy.

909. The most common pattern of idiopathic apnea of prematurity is:
a) Obstructive apnea
b) Central apnea
c) Mixed apnea, obstructive apnea usually occurs before central apnea.
d) Mixed apnea, obstructive apnea usually occurs after central apnea.
e) Mixed apnea, obstructive apnea and central apnea occur simultaneously.

910. Umbilical arterial catheterization can produce all of the following complications **except**:
a) Cardiac perforation
b) Embolization
c) Thrombosis
d) Spasm
e) Perforation

911. Umbilical venous catheterization can produce all of the following complications **except**:
a) Thrombosis
b) Cardiac perforation
c) Pericardial tamponade
d) Portal hypertension
e) Gangrene of lower extremities

912. A preterm infant develops blanching in the right lower extremity after the insertion of a umbilical arterial line. The blanching persisted. The umbilical catheter is removed immediately. Persistent spasm after removal of the catheter may be relieved by:
a) Warming the affected leg
b) Warming the opposite leg
c) Cooling the affected leg

d) Topical nitroglycerin applied over the femoral artery
e) Topical nitroglycerin applied over the dorsalis pedis artery

913. A full term infant is delivered by cesarean section due to fetal distress and meconium in the amniotic fluid. The Apgar scores are 2, 3, and 5 at 1, 5, and 10 minutes respectively. The meconium was suctioned through the endotracheal tube. The infant is placed on a mechanical ventilator. The chest x-ray appears normal. His arterial $PO_2$ is 50 in 100% oxygen. Heart sounds are normal. The most likely diagnosis is:
a) Meconium aspiration
b) Truncus arteriosus
c) Transposition of great arteries
d) Total anomalous pulmonary venous return
e) Persistent pulmonary hypertension

914. The characteristic chest x-ray findings in patients with meconium aspiration are all of the following **except**:
a) Patchy infiltrates in both lungs
b) Coarse streaking of both lung fields
c) Flattening of the diaphragm
d) Increased anteroposterior diameter
e) Presence of air leak in both lungs

915. All of the following are complications of ECMO (extracorporeal membrane oxygenation) **except**:
a) Systemic hypotension
b) Edema
c) Bleeding
d) Seizures
e) Thromboembolism

916. A full term healthy newborn infant appears with oral thrush. She has no candidal diaper rash. Her mother is healthy. The next step in management is:
a) HIV testing of the newborn
b) HIV testing of the mother
c) Culture of the oral lesions
d) Reassurance
e) HIV testing of the mother and the newborn

**Match all the different diseases with skin lesions (917-921):**

917. CMV infection
918. Candida albicans infection
919. Listeria monocytogenes infection
920. Herpes simplex virus infection
921. Pseudomonas infection

a) Satellite pustules
b) ‘Blueberry-muffin’ rash
c) Vesicular rash
d) Ecthyma gangrenosum
e) Salmon-pink pustules

922. All of the following clinical findings are associated with violent behavior in adolescents **except**:
a) Mental retardation
b) Learning disabilities
c) Anxiety
d) Severe motor disorders
e) Attention-deficit/hyperactivity disorder

923. CRAFFT mnemonic tool that is used for evaluation by interview and questionnaire to adolescents with alcohol or drug abuse includes all of the following **except**:
a) 'C' stands for **C**ar driving under influence of alcohol or drugs
b) 'R' stands for **R**elaxation after using alcohol or drugs
c) 'A' stands for **A**lone while using alcohol or drugs
d) 'F' stands for **F**ighting after using alcohol or drugs
e) 'T' stands for **T**rouble while using alcohol or drugs

924. A 16-year-old girl appears with ulcerative lesions in the genitalia. She is sexually active. She has genital ulcer syndromes. All of the following organisms can produce genital ulcer syndromes **except**:
a) Treponema pallidum
b) Haemophilus ducreyi
c) Herpes simplex virus type 1
d) Herpes simplex virus type 2
e) Group B Streptococci

925. A 17-year-old girl appear with pelvic inflammatory disease. All of the following should be considered as part of the initial evaluation **except**:
a) GYN consultation
b) Pelvic examination
c) Endocervical culture for gonorrhoeae
d) Endocervical culture for Chlamydia or enzyme immunoassay (EIA)
e) Complete blood counts with differential

926. Common variable immunodeficiency (CVID) can be produced by all of the following drugs **except**:
a) Phenytoin
b) Phenobarbital
c) Gold
d) Sulfasalazine
e) D-penicillamine

927. Selective IgA deficiency is noted in patients treated with all of the following drugs **except**:
a) D-penicillamine
b) Gold
c) Phenytoin
d) Pyrimethamine
e) Sulfasalazine

928. A child appears with short, pudgy hands, redundant skin, hyperextensible joints of the hands and feet but unable to extend the elbow completely. The child also has fine, sparse, light hair, and eyebrows. The most likely diagnosis is:
a) Ataxia-telangiectasia
b) Omenn syndrome
c) Cartilage hair hypoplasia
d) Hyper IgE syndrome
e) Wiskott-Aldrich syndrome

929. Ataxia telangiectasia mutation (ATM) is maped on the long arm of chromosome:
a) X-chromosome
b) Y-chromosome
c) Chromosome 7
d) Chromosome 11
e) Chromosome 15

930. All of the following are features of Wiskott-Aldrich syndrome **except**:
a) Prolonged bleeding after circumcision
b) Atopic dermatitis
c) Recurrent infections
d) Bloody diarrhea
e) Initially, thrombocytopenia is due to antiplatelet antibodies.

931. The frequent major complication in patients with juvenile dermatomyositis is:
a) Bowel perforation
b) Partial lipodystrophy
c) Calcinosis
d) Aspiration pneumonia
e) Depression

932. The most common cause of nonthrombocytopenic purpura in children is:
a) Polyarteritis nodosa
b) Kawasaki disease
c) Meningococcemia
d) Listeria infection
e) Henoch-Schonlein purpura

933. Hypersensitivity angiitis occurs most likely due to:
a) Sulfonamides
b) Ampicillin
c) Pseudomonas infection
d) Listeria infection
e) Kawasaki disease

934. A child appears with episodes of intense pain, erythema, and heat in the distal portion of the lower extremities. He noticed that heat exposure triggers clinical manifestations. The most likely diagnosis is:
a) Erythromelalgia
b) Reflex sympathetic dystrophy
c) Allergic reaction
d) Leukocytoclastic vasculitis
e) Takayasu arteritis

935. The most common cause of community-acquired bacterial pneumonia is:
a) Haemophilus influenzae type b
b) Streptococcus pneumoniae
c) Staphylococcus aureus
d) Pseudomonas aeruginosa
e) E. coli

936. The most common cause of community-acquired otitis media is:
a) Pseudomonas aeruginosa
b) E. coli
c) Haemophilus influenzae type b
d) Staphylococcus aureus
e) Streptococcus pneumoniae

937. A child appears with upper respiratory tract infection and a characteristic rash. The rash appeared within 24-48 hours after the onset of symptoms. The rash began around the neck and subsequently involved trunk and extremities. The rash is diffuse, finely papular, and erythematous. The bright red discoloration of the skin, which blanches on pressure. The skin feels rough and has goose-pimple appearance. The rash is more prominent along the creases of the elbows, axillae, and groins. She also has pharyngitis. The most likely diagnosis is:
a) Kawasaki disease
b) Rubella
c) Roseola
d) Toxic shock syndrome
e) Scarlet fever

938. The most common cause of bacterial pharyngitis is:
a) Group C Streptococcus
b) Group G Streptococcus
c) Group A Streptococcus

d) Corynebacterium diphtheriae
e) Arcanobacterium haemolyticum

939. All of the following clinical manifestations suggest Streptococcal toxic shock syndrome **except**:
a) Hypotension, renal impairment, and coagulopathy
b) Hypotension, hepatic involvement, and generalized erythematous maculopapular rash
c) Hypotension, adult respiratory distress syndrome, and soft tissue necrosis
d) Hypotension, splenic involvement, and coagulopathy
e) Hypotension, soft tissue necrosis, and hepatic involvement

940. The definitive diagnosis of Streptococcal toxic shock syndrome is made by the following findings:
a) Clinical criteria and detection of group A Streptococcus from a normally sterile site
b) Clinical criteria and detection of group A Streptococcus from a normally unsterile site
c) Clinical criteria and detection of group B Streptococcus from a normally sterile site
d) Clinical criteria and detection of group D Streptococcus from a normally unsterile site
e) Clinical criteria and detection of group C Streptococcus from a normally sterile site

941. The most common clinical manifestations in patients with disseminated gonococcal infection (DGI) include all of the following **except**:
a) Carditis
b) Asymmetric arthralgia
c) Petechial acral skin lesions
d) Tenosynovitis
e) Suppurative arthritis

942. The most common site of positive culture in women with DGI (disseminated gonococcal infection) is:
a) Urethra
b) Cervix
c) Vagina
d) Pharynx
e) Rectum

943. The most common site of positive culture in men with DGI (disseminated gonococcal infection) is:
a) Rectum
b) Urethra
c) Pharynx
d) Anus
e) Eyes

944. Haemophilus influenzae requires the following factors for growth:
a) Factors I and II
b) Factors III and IX
c) Factors IV and VIII
d) Factors V and X
e) Factors II and IV

945. The most common clinical manifestation of tularemia in children is:
a) Lymphadenopathy
b) Fever
c) Ulcer
d) Pharyngitis
e) Myalgia

946. The most common clinical syndrome of tularemia in children is:
a) Ulceroglandular
b) Glandular
c) Pneumonia
d) Oropharyngeal
e) Oculoglandular

947. The preferred therapy in patients with tularemia is:
   a) Chloramphenicol
   b) Gentamicin
   c) Cefotaxime
   d) Ceftriaxone
   e) Quinolones

948. The preferred diagnostic test in patients with tularemia is:
   a) Blood culture
   b) Wound culture
   c) Gram stain
   d) Urine culture
   e) Serum agglutination test

949. All of the following statements are true about prevention of herpes infections **except**:
   a) Wresters with herpes simplex virus (HSV) cutaneous lesions should not participate in practice and competition until all lesions are healed.
   b) All children with active herpes lesions should not go to daycare or school activities even when the lesions can be covered.
   c) Children with immunodeficiencies or chronic skin diseases should not be cared by individuals with herpetic whitlow or active uncovered fever blisters.
   d) Administration of acyclovir before a known trigger factor (e.g., intense sunlight) usually prevents recurrences.
   e) Wrestling mats should be cleaned with a bleach solution at least daily.

950. A fetus is infected with varicella at 6-12 of gestation. The most likely affected part of the body is:
   a) Eyes
   b) Brain
   c) Limbs
   d) Heart
   e) Kidneys

951. A fetus is infected with varicella at 16-20 wk of gestation. The most likely affected parts of the body are:
   a) Limbs and liver
   b) Eyes and brain
   c) Heart and lungs
   d) Liver and spleen
   e) Kidneys and pancreas

952. A child appears in ER with paroxysms of fever alternating with periods of fatigue but otherwise he is relatively well. He experiences high fever, rigors, sweats, myalgias, abdominal pain, vomiting, diarrhea, pallor, and jaundice during febrile paroxysms. He migrated in USA recently. However, he received malaria chemoprophylaxis prior to his journey. The most likely diagnosis is:
   a) Typhoid fever
   b) Pneumococcal bacteremia
   c) Pneumococcal meningitis
   d) Malaria
   e) Viral gastroenteritis

953. A child pretends to drink from cup. The age of this child is:
   a) 9 months
   b) 12 months
   c) 15 months
   d) 18 months
   e) 24 months

954. A child speaks 4-6 words. The age of this child is:
   a) 12 months
   b) 15 months
   c) 18 months
   d) 24 months
   e) 30 months

955. A child scribbles. The average age of attainment is:
   a) 11 months
   b) 12 months
   c) 13 months
   d) 14 months
   e) 15 months

956. A child can put hands together in midline. The age of this child is:
   a) 2 months
   b) 3 months
   c) 4 months
   d) 5 months
   e) 6 months

957. A child bangs two cubes. The average age of attainment is:
   a) 6 months
   b) 7 months
   c) 8 months
   d) 9 months
   e) 10 months

958. A child speaks two-word sentences (e.g., "Mommy milk"). The age of this child is:
   a) 12 months
   b) 15 months
   c) 19 months
   d) 24 months
   e) 30 months

959. A child builds tower of six cubes. The age of this child is:
   a) 15 months
   b) 18 months
   c) 22 months
   d) 30 months
   e) 36 months

960. A child stares at own hand. The age of this child is:
   a) 2 months
   b) 4 months
   c) 6 months
   d) 8 months
   e) 10 months

961. A child uses stick to reach a toy. The average age of attainment is:
   a) 15 months
   b) 17 months
   c) 20 months
   d) 24 months
   e) 30 months

962. A child's asymmetric tonic neck reflex and palmer grasp are absent. The age of this child is:
   a) 4 months
   b) 6 months
   c) 8 months
   d) 10 months
   e) 12 months

**Match the different age groups and growth in head circumference (963-967):**

963. 0-3 months
964. 3-6 months
965. 6-12 months
966. 1-3 years
967. 4-6 years

a) 2 cm/month
b) 1 cm/month
c) 0.5 cm/month
d) 0.25 cm/month
e) 1 cm/year

**Match the different age groups and average monthly weight gain (968-972):**

968. 0-3 months
969. 3-6 months
970. 6-9 months
971. 9-12 months
972. 1-3 years

a) 2 lb
b) 1.25 lb
c) 1 lb
d) 13 oz
e) 8 oz

973. About 70-80% of children sleep through the night at:
a) 3 months of age
b) 6 months of age
c) 9 months of age
d) 12 months of age
e) 15 months of age

**Match the different age groups and average duration of sleep (974-978):**

974. 0-3 months
975. 3-12 months
976. 1-3 years
977. 3-6 years
978. 6-12 years

a) 16-20 hours per day
b) 14-15 hours per day
c) 12-14 hours per day
d) 11-12 hours per day
e) 10 hours per day

**Match the different drugs and their side effects (979-983):**

979. Clonidine
980. Desipramine
981. Carbamezepine
982. Valproic acid
983. Lamotrigine

a) Sudden death in high doses
b) Sudden deaths when used with stimulants
c) Hepatic failure occurs in the first few months of treatment
d) Risk of Stevens-Johnson syndrome
e) Fever, sore throat, drowsiness, blurred vision, neuromuscular disturbance, and leukopenia

984. A child's IQ test result is 60. The most likely the child has:
a) Mild mental retardation
b) Moderate mental retardation
c) Severe mental retardation
d) Profound mental retardation
e) Normal mental status

985. All of the following statements are true about pain and symptom management **except**:
a) Oral therapy is preferred.
b) Use topical anesthetics when possible
c) Use anesthetic blocks for regional pain
d) Cognitive, physical, and behavioral therapies are always used.
e) Prescribe PRN medication for constant pain

**Match the use of different adjuvant medications with different clinical pain manifestations (986-990):**

986. Stimulants
987. Steroids
988. Neuroleptics
989. Sedatives and hypnotics
990. Antidepressants and anticonvulsants

a) Agitation and nausea
b) Resistant pain
c) Muscle spasm or anxiety
d) Opioid-induced somnolence
e) Neuropathic pain

991. The following statement is not true about opioid use guidelines:
a) Strong medications should be saved for last use.
b) Always give constipation therapy when starting opioids.
c) Begin with weak opioids (e.g., codeine) for mild pain and replace with strong opioids (e.g., morphine) for strong or unresponsive pain.
d) Begin with short-acting opioids at regular intervals then switch to long-acting only when dose requirements have established.
e) When oral/rectal routes are no longer usuable, then subcutaneous infusions are used.

992. The plasma level of leptin is directly related to the following component:
a) Fat mass
b) Size of pituitary
c) Size of hypothalamus
d) Muscle mass
e) Bone mass

993. A 4-day-old newborn infant's serum phosphorus level is 8 mg/dL. The serum electrolytes and calcium levels are normal. The next step in management is:
   a) Decrease phosphorus intake
   b) Discontinue phosphorus intake
   c) Decrease calcium intake
   d) Decrease magnesium intake
   e) Reassurance

994. A child has decreased urine output after surgery. He has normal blood pressure and heart rate. He gained weight slightly. He has elevated urinary excretion of sodium. The next step in management is:
   a) Increased the fluid intake by giving a bolus.
   b) Increased the maintenance fluid by intravenous route.
   c) Restrict the fluid intake
   d) Resume oral hydration immediately
   e) Give furosemide

995. A child develops oliguria after surgery. She also develops tachycardia, hypotension, and decreased urinary excretion of sodium. The next step in management is:
   a) Give isotonic solution immediately through intravenous route.
   b) Start oral hydration immediately
   c) Start 10% glucose infusion immediately
   d) Start 0.45% saline solution intravenously
   e) Restrict the fluid immediately

**Match all the different drugs and their effects (996-1000):**

996. Amrinone
997. Dobutamine
998. Phenylephrine
999. Norepinephrine
1000. Epinephrine

   a) Can produce sudden hypertension
   b) Phosphodiesterase inhibitor
   c) Strengthens cardiac contractions
   d) Produces short-run rise in blood pressure
   e) May reduce renal perfusion

**Match all different diseases and sites of injury resulting in respiratory failure (1001-1005):**

1001. Werdnig-Hoffman disease
1002. Cystic fibrosis
1003. Prune-belly syndrome
1004. Guillain-Barre syndrome
1005. Croup

   a) Chest wall deformity
   b) Neuromuscular
   c) Peripheral airway obstruction
   d) Central airway obstruction
   e) Spinal cord

## ANSWERS

| No. | | **Correct Answer** |
|---|---|---|
| 1. | e) | CNS abnormalities; a 1-month-old normal child has rooting reflex that facilitates sucking. |
| 2. | b) | 8 months of age |
| 3. | a) | Questionable |
| 4. | e) | Questionable. The long-term benefits of early accomplishments are questionable. |
| 5. | d) | Enlargement of breast buds (between 8 to 13 years of age) |
| 6. | d) | 9½ years of age |
| 7. | e) | DHEAS may appear as early as 6 years of age. |
| 8. | d) | Rumination disorder is characterized by weight loss or failure to gain weight because of repeated regurgitation of food without nausea or other GI problems. |
| 9. | a) | Tachycardia, hypotension, and decreased oxygen saturation |
| 10. | a) | Drowning most commonly occurs in bathtubs or swimming pools; most children are older than 5 years of age. |
| 11. | e) | Hepatitis (e.g., elevated liver enzymes, jaundice, or acute hepatic necrosis) rarely occurs in children. |
| 12. | e) | The physician should not remove the infant from a mechanical ventilator but arrange for meeting with the parents and social worker. The grade 2 IVH is a benign condition and does not cause brain injury. A 26-week-gestational age preterm infant can survive without a major problem. |
| 13. | d) | Running causes more fire; rolling is indicated if clothes catches fire. |
| 14. | e) | Control of hot water thermostat (maximum water temperature 120°F) |
| 15. | a) | VAS (Visual Analog Scale) is used in patients who are 8 years of age and older. Answers (d) and (e) are used in patients who are 4 years of age and older. Answers (b), (c) and behavioral or combined behavioral-physiologic scales can be used in all age groups. VAS is a vertical 10-cm line, patient marks on line between "no pain" and "worst pain imaginable" (or sad face). |
| 16. | d) | Faces scales (e.g., Wong-Baker, Oucher, Bieri, McGrath scales) are used in patients who are 4 years of age and older. **In faces scale**, patients compare their pain to line drawings of faces or photos of children. |
| 17. | c) | Autonomic measures (e.g., heart rate, BP, heart rate spectral analysis) are used in all ages especially those who are receiving a mechanical ventilation. Behavioral scales are facial expressions and limb movements. Physiological scales are heart rate and BP. Hormonal-metabolic measures are plasma or salivary samples of hormones (e.g., cortisol, epinephrine). |
| 18. | b) | VAS (Visual Analog Scales), color and other analog scales **cannot** be used in children with cognitive limitations. |
| 19. | a) | Glucose-6-phosphatase deficiency or absence is noted in patients with type Ia glycogen storage disease (Von Gierke) |
| 20. | b) | Pompe disease (or type II glycogen storage disease) |
| 21. | a) | Autosomal recessive |
| 22. | e) | Acid maltase (acid alpha-glucosidase) |
| 23. | b) | Muscle biopsy or liver biopsy specimen reveals decreased quantity of acid maltase activity. |
| 24. | a) | Hyperinsulinemia and large for gestational age (LGA) may be present in patients with erythroblastosis fetalis like IDM (infant of diabetic mother). |
| 25. | e) | Microcephaly, macroglossia, and islet cell hyperplasia are also present in Beckwith-Wiedemann syndrome. |
| 26. | a) | Retinoblastoma |
| 27. | b) | Chromosome 11p |
| 28. | e) | Bilirubin encephalopathy (kernicterus) can cause choreoathetotic cerebral palsy and sensorineural hearing loss. |
| 29. | c) | Gentamicin, furosemide, high serum bilirubin, and hypoxia with or without hyperventilation |
| 30. | e) | ROP |
| 31. | d) | Birth trauma (e.g., brachial plexus, phrenic nerve, and spinal cord injuries) |
| 32. | b) | PVL and hypoxic-ischemic encephalopathy |
| 33. | a) | IVH and meningitis |
| 34. | c) | Hypoxia can cause poor speech. |
| 35. | a) | Asymmetric SGA (small for gestational age) patients have normal head circumference unlike symmetric SGA. |

36. d) IVH; CMV infections can cause encephalopathy.
37. b) Screening for sickle cell anemia is not indicated in white adolescent females. Sickle cell disease is common in African-American children. HIV-testing is indicated in high-risk adolescents. Spirometry is useful in adolescents who smoke routinely. Sexually active adolescents should be screened for sexually transmitted diseases.
38. d) Antidepressant medications are useful in depressed patients with anorexia nervosa.
39. e) Bradycardia with pulse rate as low as 20 beats per minute can occur in patients with AN. The mortality occurs in 10% of cases and is due to electrolyte imbalance, cardiac arrythmias, or CHF (congestive heart failure) in the recovery phase.
40. a) A daily weight gain should be limited to 200-400 grams.
41. a) A "refeeding syndrome" includes hypophosphatemia that is due to insulin-induced shift of phosphate from extracellular to intracellular space.
42. d) A prolonged use of ipecac can cause myocarditis.
43. d) Chromosome 22q
44. e) Cleft palate is included in CATCH 22 syndrome (not the cleft lip)
45. e) The patients with severe combined immunodeficiency (SCID) have lymphopenia (less than 2,000 per $mm^3$) at birth.
46. d) Serum immunoglobulin levels are decreased or absent in patients with severe combined immunodeficiency (SCID) disease and no antibodies are formed after immunizations.
47. d) The patients with CHILD syndrome appears with unilateral exfoliative erythematous dermatitis (psoriasis-like) **with facial sparing**, airway cartilage calcification, epiphyseal calcification, and punctuate vertebrae.
48. d) X-linked dominant
49. c) Sphingomyelinase
50. e) Glucocerebrosidase
51. a) Arylsulfatase A
52. b) Beta-galactosidase
53. d) Beta-hexosaminidases A and B
54. b) **Neurologic: Abdominal pain**, vomiting, diarrhea, constipation, ileus, dysuria, muscular hypotonia, sensory neuropathy, seizure, and respiratory failure
55. c) **Pink to brown staining urine**, bullae, crusts, scar formations, hypo-and hyperpigmentation, alopecia, sclerodermoid lesions, hypertrichosis, splenomegaly, hemolytic anemia, and erythrodontia
56. d) **Photosensitivity: Bullae on the sun-exposed areas of the skin** (e.g., dorsa of the hands), skin fragility, crusts, scar formations, sclerodermoid lesions, hyperpigmentation, hypopigmentation, and hypertrichosis
57. e) **Photosensitivity: Pink urine, bullae**, crust, scar formations, sclerodermoid lesions, hypopigmentation, hyperpigmentation, and hypertrichosis
58. a) **Photosensitive: Erythema, edema, itching, burning sensation**, and scarring vesicles
59. b) This boy has erythropoietic protoporphyria (EPP). Some patients do not have cutaneous clinical manifestations (e.g., erythema, edema, petechiae, vesicles, and crusting). Gallstones occur early and fairly common. Hepatic diseases are uncommon. Anemia is absent. The therapy includes beta-carotene, topical sun-screen agents, and avoidance of the Sun.
60. e) Glucose
61. d) Mental retardation and/or seizure activities can occur.
62. c) 1-3 hours after birth
63. e) SGA (small for gestational age)
64. e) A chaperone should be present whenever adolescent female patients are examined by male physicians. However, a chaperone's presence is not yet indicated whenever adolescent male patients are examined by female physicians.
65. b) Morphine
66. c) Benzoyl ecgonine
67. a) Acetaldehyde
68. d) Carboxy-and hydroxymetabolites
69. e) Hydroxylated metabolites
70. d) Opiates
71. b) Amphetamines

72. c) LSD (lysergic acid diethylamide)

73. e) Volatile nitrites (e.g., amyl nitrite, butyl nitrite, and related compounds used in room deodorizers), airplane glue (toluene), and gasoline.

74. c) Methylenedioxymethamphetamine

75. b) Thrombocytopenia, T-cell deficiency, and poor antipolysaccharide antibody production

76. d) Selective IgA deficiency and T-cell deficiency

77. c) Combined B- and T-cell defects of varying severity (e.g., defective antibody-mediated immunity, combined immunodeficiency, and severe combined immunodeficiency)

78. a) Low immunoglobins, CD4 deficiency, and lack of T-cell responses to antigens

79. e) Poor T-cell responses, autoimmunity, impaired apoptosis, and increased bcl-2

80. c) P. carinii, fungi, and viruses attack the children with complete DiGeorge syndrome. Patients with partial DiGeorge syndrome experienced only mild infections.

81. e) Hypokalemia, hyperlipidemia, weight gain, and Cushingoid habitus can occur.

82. d) Allergic conjunctivitis

83. d) Intestinal bleeding does not cause death in patients with SLE. However, pulmonary hemorrhage can cause death in patients with SLE.

84. e) Chronic use of corticosteroids

85. a) Juvenile dermatomyositis

86. a) Coombs-negative anemia is present in juvenile dermatomyositis.

87. d) Retinitis is a less frequent finding. **Gottron papules** (skin over the metacarpal and proximal interphalangeal joints are hypertrophic and reddish pink), **Gowers sign** (a child cannot rise unassisted from the floor without climbing up the body). Mechanic's hands, with thickened skin, skin overgrowth, and range losses are due to refractory, inflammatory myopathy that is more common in adults.

88. a) **ESR is normal**. The laboratory findings in patients with juvenile dermatomyositis are the following: **elevated** serum levels of muscle-derived enzymes (e.g., creatine kinase, aldolase, lactic acid dehydrogenase, serum glutamic-oxaloacetic transaminase); **presence of ANA (nonspecific**, 60% of cases); **negative antibodies** to SSA, SSB, Sm, RNP, and DNA; **negative rheumatoid factor**; elevated percentage of peripheral blood CD19B cells but decreased lymphocyte counts and CD8 cells; presence of Coombs-negative anemia.

89. a) Bed rest should be avoided because weight bearing improves bone density. A sunscreen (free of para-aminobenzoic acid) provides maximum protection against ultraviolet rays A and B throughout the year.

90. b) **Relapsing fever** (febrile periods that are separated by intervals of normal temperature); **remittent fever** (persistent and varies by more than 0.5°C/24 hours); **biphasic fever** (a single illness with two distinct periods of fever over 1 or more weeks); **periodic fever** (fever syndrome with regular periodicity); **intermittent fever** (a period of normal temperature on most days).

91. b) Central fever

92. e) Tertian fever (fever occurs on the 1st and 3rd days)

93. a) Biphasic fever

94. c) Periodic fever (fever syndromes with a regular periodicity)

95. d) Quartan fever (fever occurs on the 1st and 4th days)

96. b) **Relative tachycardia** (i.e., pulse rate is elevated out of proportion to the body temperature) is noted in infectious diseases with release of toxin or noninfectious diseases.

97. a) **Relative bradycardia** (i.e., temperature-pulse dissociation, pulse rate remains low in the presence of fever) is noted in drug fever, typhoid fever, brucellosis, leptospirosis, and conduction defect (e.g., Lyme disease, acute rheumatic fever, infective endocarditis, viral myocarditis).

98. c) **Biphasic fever** is noted dengue fever, leptospirosis, yellow fever, and the African hemorrhagic fevers (e.g., Ebola, Lassa fever, Marburg).

99. e) Periodic fever is noted in apthous stomatitis, pharyngitis, adenopathy, and cyclic neutropenia.

100. d) Relapsing fever is due to Borrelia recurrentis, Q fever, typhoid, TB, Dengue fever, Lyme disease, malaria, Epstein-Barr virus, acute rhematic fever, and many other causes.

101. a) Hypotension, cyanosis, oliguria, anuria, jaundice, direct hyperbilirubinemia, purpura fulminans, and signs of cardiac failure are the **secondary manifestations of sepsis.**

**Other primary manifestations** include tachycardia, skin lesions (e.g., petechiae, diffuse erythema, ecchymoses, ecthyma gangrenosum), and altered mental status (e.g., agitation, confusion, excitation, anxiety, lethargy, obtundation, coma).

102. e) Positive blood cultures; answers (a), (b), (c), (d), positive Gram stain, positive leukocytes in urine, thrombocytopenia, prolonged PT, low fibrinogen levels, D-dimer, elevated LFTs, metabolic acidosis, and hypocalcemia are noted in septic shock.
103. c) A prophylactic intubation and mechanical ventilation are indicated in infants and children with respiratory distress because they are susceptible to develop respiratory failure.
104. e) Neutropenia; answers (a), (b), (c), (d), and Dohle bodies suggest bacterial infections.
105. a) Metabolic alkalosis does not occur in sepsis. Other laboratory findings of sepsis are prolonged PT, prolonged PTT, reduced serum fibrinogen levels, elevated fibrin split products, leukocytosis, leukopenia, elevated band counts, toxic granulations, and vacuolation of neutrophils.
106. e) Pneumonia occurs rarely. Other complications are sinusitis, mastoiditis, acute rheumatic fever, and acute poststreptococcal glomerulonephritis.
107. c) All of the above; acute glomerulonephritis can occur after group A Streptococcal skin or upper respiratory tract infection.
108. b) Acute rheumatic fever can occur only after group A Streptococcal upper respiration tract infection.
109. a) Poststreptococcal reactive arthritis usually involves the larger joints; a small number of patients develop valvular heart disease.
110. e) Carditis; some physicians give secondary penicillin prophylaxis up to 1 year from the onset of infection.
111. d) Shigella, Ekiri syndrome or "lethal toxic encephalopathy" is a rare syndrome of severe toxicity, severe hyperpyrexia, headaches, brain edema, and convulsion without sepsis or significant dehydration. The mechanism is unclear.
112. d) Dehydration; answers (a), (b), (c), and (e)r are also complications of Shigella infection.
113. d) Blood-tinged vaginal discharge (vaginitis) is rare and usually associated with Shigella flexneri infections.
114. d) Shigella sonnei organism does not cause HUS because it does not produce Shiga toxin. All organisms in answers (a), (b), (c), and (e) produce Shiga toxin. HUS is caused by Shiga toxin-mediated endothelial damage. Shiga toxin is also produced by ShET-1 by Shigella flexneri 2a.
115. d) Shigella dysenteriae type 1
116. c) Vitamin A deficiency (hyporetinemia) can occur in children with measles (up to 72% of cases).
117. d) Cerebral bleeding is absent; **rare** complication of measles are answer (c), hemiplegia, cerebral thrombophlebitis, and retrobulbar neuritis.
118. e) Measles can causes Hecht giant cell pneumonia (interstitial pneumonia).
119. d) Remove the firearm from the environment of children and adolescents
120. c) Acts of rage between relatives or acquaintaces
121. e) Hydroxyapatite
122. c) Slightly less than 50% of the total serum calcium
123. c) In metabolic alkalosis, more calcium is bound to albumin, less free or ionized calcium is present in serum resulting in hypocalcemic symptoms and signs (e.g., sodium bicarbonate infusion in metabolic acidosis).
124. b) Increased intracranial pressure, slow growth, alopecia, drying and cracking of skin, hepatosplenomegaly, painfull swelling of long bones, fragile bone, and carotenemia
125. e) Nyctalopia, photophobia, xeropthalmia, conjunctivitis, retarded growth, faulty epiphyseal bone formation, defective tooth enamel, impaired resistance to infection, and skin keratinization.
126. a) Beriberi, constipation, insomnia, tachycardia, cardiac failure, edema, polyneuritis, aphonia, and elevated pyruvic acid level in blood
127. c) Ariboflavinosis, photophobia, burning and itching eyes, cheilosis, corneal vascularization, and poor growth
128. d) Megaloblastic anemia, glossitis, pharyngeal ulcers, and impaired immunity
129. d) Hypercalcemia; the boy has subcutaneous fat necrosis; there is history of birth asphyxia or trauma; hypercalcemia is probably due to excessive 1, 25-dihydroxyvitamin D that is probably produced by the macrophages infiltrating the areas of fat necrosis.
130. a) Early screening inventory test is performed in children between 3-6 years of age. Answers (b) is performed between 0-6 years of age. Answers (c) and (d) are performed between 0-3 years of age. Answer (e) is performed between 4-48 months of age.

131. a) PEDS (parents evaluation of developmental status) is performed between 0-8 years of age. PEDS is a well-documented psychometric and can be done by parents.

132. c) Ignore the behavior; breath holding behavior can occur during the first years of life. Infants and toddlers do breath holding spell to control the parents and their caregivers.

133. a) 0%

134. b) Initially, parents should confront the child to give clear message that lying is not acceptable. If the situation does not improve, professional help is indicated.

135. a) A boy (3-6 years of age) with high level of aggressive behavior remains aggressive, especially without family-focused intervention.

136. e) Truancy (disorganization within the home or developing personality problem) and run-away behavior are never developmentally normal.

137. a) The mother should turn away briefly from the child during the episode of temper tantrum and oppsitionalism. After the child is calm, the mother should tell the child that the reasons for frustrations are understandable but the opposional behavior is not acceptable.

138. d) Scurvy or vitamin C deficiency; the x-ray findings are characteristic of scurvy.

139. e) Trisomy 21

140. b) Trisomy 13

141. a) Klinefelter syndrome (47, XXY)

142. e) Fragile X syndrome

143. d) Supravalvular aortic stenosis

144. c) Hypotonia, hypogonadism, and obesity

145. a) Bile duct paucity with cholestasis

146. e) Broad thumbs and toes

147. b) Uncontrollable bouts of laughter, seizures, and jerky movements

148. b) Aniridia; WAGR syndrome represents Wilms tumor, aniridia, male genital hypoplasia, and mental retardation.

149. a) Brachycephaly, midfacial hypoplasia, cleft palate, short stature, behavioral problems, and mental retardation

150. d) Pulmonary artery stenosis, butterfly vertebrae

151. e) Microcephaly, hypoplastic male external genitalia, seizures, growth retardation, and severe mental retardation

152. c) Conotruncal cardiac defects, hypoplasia or agenesis of the thymus and parathyroid glands, hypoplasia of auricle and external auditory canal

153. b) Glycine cleavage enzyme deficiency produces hyperglycinemia.

154. a) **Minimal amount of protein** is used as a mixture of essential amino acids (0.25 g/kg/day) during the first 24 hours of therapy. Infants usually become symptomatic within a few days of protein feeding. Answers (b), (c), (d), and (e) are therapies in patients with hyperammonemia. A peritoneal dialysis or hemodialysis is indicated if above therapies fail.

155. a) The cause is unknown. Urea cycle enzyme activities are normal. The newborn girl has severe transient hyperammonemia.

156. a) Phytanic acid-restricted diet; early institution of phytanic acid-restricted diet can reverse peripheral neuropathy and prevent the progression of the eye and CNS clinical manifestations. In classic Refsum disease, phytanic acid is increased and pristanic acid is decreased.

157. c) Phytanoyl-CoA deficiency is localized to the peroxisome.

158. e) 1% silver nitrate; answers (a), (d), or 1% tetracycline opthalmic ointment is an alternative therapy.

159. c) Muscle tone (**not** muscle strength)

160. b) Apgar score is 2 (heart rate is over 100/minute). Infants with Apgar scores 0-3 need immediate resuscitation.

161. c) False-negative (presence of acidosis but normal Apgar) results are due to maternal acidosis, some full-term infants, and high fetal catecholamine levels. False-positive (absence of fetal acidosis or hypoxia but low Apgar) results are due to spinal cord trauma, CNS anomalies, airway obstructions, pneumonia, sepsis, myopathy, neuropathy, lung anomalies (hypoplasia, diaphragmatic hernia), and hemorrhage resulting in hypovolemia.

162. b) Drugs that are weak acids have less effects on neonates.

163. e) CMV (term infant) is allowed to take breast feeding. Breast feeding is allowed in hepatitis B virus infections **after the infant receives hepatitis B immunoglobulin and hepatitis B vaccine** (**not** before the immunizations). HTLV is human T-cell leukemia virus types 1 and 3. Breast feedings are also contraindicated in active TB, breast abscesses, herpetic vesicles on the breasts only, and herpes zoster vesicles on the breasts only. Herpes simplex and herpes zoster lesions in areas other

than breasts can be covered and breast feeding is allowed. Rubella (wild type) present in breast milk, rarely causes newborn infections, but the breast feeding is not contraindicated.

164. e) Mycobacterium tuberculosis is present in breast milk. However, breast feeding is contraindicated due to aerosol spreads during maternal active TB (**not** due to transmission through the breast milk). Hepatitis (A, B, and C) viruses are present in breast milk but do not cause infections through the breast milk. However, hepatitis C virus transmission is theoretically possible.
165. a) Aldomet is probably safe but used with caution.
166. e) Category X drugs have more risks than benefits.
167. c) Neuroblastoma, bleeding (vitamin K deficiency), IUGR, and other anomalies occur in phenytoin therapy.
168. b) Hypoplastic nasal structures, fetal bleeding, and death occur in warfarin therapy.
169. a) Hypothyroidism also occurs due to maternal iodides intake and propylthiouracil.
170. d) Facial-ear defects and heart disease occur in accutane therapy.
171. e) Ebstein's anomaly and macrosomia occur in lithium therapy.
172. a) Warfarin prevents the carboxylation of gamma-carboxyglutamic acid that is a component of osteocalcin and other vitamin K-dependent bone proteins. Warfarin is vitamin K antagonist.
173. b) Phenytoin causes deficiency of epoxide hydroxylase resulting in accumulation of a metabolite that causes teratogenic effects.
174. e) Dexamethasone; it is also used in congenital heart block.
175. a) Indomethacin may cause nephrocalcinosis and postnatal sodium losses
176. b) Maternal intravenous immunoglobulin and umbilical vein platelet transfusions
177. c) Flecainide is the drug of choice. If the fetus has hydrops, administration of Flecainide through umbilical vein is indicated in utero. Other useful drugs are digoxin, procainamide, amiodarone, and quinidine.
178. d) Vitamin $B_{12}$ may be effective in methylmalonic acidemia.
179. b) Kernicterus
180. a) Nephrocalcinosis, biliary stones, deafness, low (sodium, chloride, and K)
181. e) Pyloric stenosis is caused by erythromycin and prostaglandins.
182. c) Intestinal perforation, oliguria, and hyponatremia
183. d) Seizures, withdrawal, and chest wall rigidity
184. e) Baby is blue when stops crying and becomes pink when starts crying.
185. d) Anuria, oligohydramnios, pulmonary hypoplasia, and pneumothorax
186. a) Aspiration pneumonia is due to esophageal atresia and TE fistula.
187. b) Regurgitation of milk is due to cleft palate.
188. c) Scaphoid abdomen and respiratory distress
189. d) C4 (4th cervical vertebra level) is injured in NSVD.
190. d) C7-T1 (lower cervical and upper thoracic levels) are injured in breech delivery.
191. e) Right peripheral facial nerve palsy due to the pressure effect from forcep delivery. The forehead wrinkles on the affected side with central paralysis that involves only lower two thirds of the ipsilateral side of the face.
192. a) Ganciclovir therapy is being evaluated.
193. e) Transmitted through cat feces or undercooked meat
194. c) Life-threatening illness
195. a) Cataracts
196. d) Penicillin is the drug of choice.
197. e) Liver laceration during breech delivery causes subcapsular hematoma of the liver. The diagnosis is made by ultrasonographic findings.
198. e) Antireflux therapy is not indicated in preterm infants with apnea because the role of GE reflux in apnea of prematurity is controversial. Mechanical ventilation is indicated when nasal CPAP (continuous positive airway pressure, 3-5 cm $H_2O$) failed to improve the clinical conditions (i.e., apnea).
199. a) Hypotonia is noted in **phase 1** (1st 1-2 days) (e.g., poor sucking, stupor, hypotonia, and seizures). **Phase 2** (middle of 1st week) patients appear with hypertonia of extensor muscles, opisthotonos, retrocollis, and fever. **Phase 3** (after 1st week) patients appear with hypertonia.

200. e) Hemolytic jaundice due to 'ABO' incompatibility manifests during the first 24-36 hours of life.

201. a) Lack of **physicians** concern regarding the presence of jaundice, delay in measuring serum bilirubin levels despite marked jaundice, delay in starting phototherapy, and failure to respond to parenteral concern regarding jaundice, lethargy, and poor feeding are also the preventable causes of jaundice.

202. b) 20 mg/dL or higher; patients with hemolysis, double volume exchange transfusions should be initiated when the serum indirect bilirubin level is 20 mg/dL or higher.

203. c) Whole blood (33% packed-RBCs and 67% plasma) is used for double volume exchange transfusions; answers (e) is used for simple transfusions in newborns with anemia.

204. b) From 4 Z, 15 Z-bilirubin to 4 Z, 15 E-bilirubin

205. d) Eye injury and nasal occlusion from the bandages are not common complications. Other common complications are chilling from exposure of the infant, purpuric rash associated with transient porphyrinemia, and bronze baby syndrome. Phototherapy should not be used in patients with porphyria.

206. e) Anti-Lewis antibodies do **not** cause hemolytic disease of the newborn. Other rare causes are RBC antigens (e.g., Kell, Duffy, Lutheran, Diego, Kidd, M, S, P, MNS, Xg, $C^W$, $C^X$, and $D^U$).

207. b) Recurrent sinopulmonary infections (80% of cases)

208. e) Lymphoreticular type of malignancy

209. c) X-linked recessive

210. a) Low serum level of IgM

211. e) Gastroesophageal reflux (over 50% of cases)

212. a) Cystic fibrosis

213. e) Thin-section high-resolution CT scanning has replaced bronchography as the gold standard. CT scan typically reveals **cylindrical** ("tram lines," "signet ring appearance"), **varicose** (bronchi with "beaded contour"), **cystic** (cysts appear in "strings and clusters"), or mixed types.

214. e) Streptococcus pneumoniae with either RSV or Mycoplasma pneumoniae

215. a) Staphylococcus aureus and Streptococcus pneumoniae

216. e) Nasal polyps or sinus diseases occur less frequently than rectal prolapse, electrolytes or acid-base abnormalities. Answers (a), (b), (c), and (d) are in the order of decreasing frequencies (i.e., answer (a) is the most common presentation). Hepatobiliary diseases occur **less** frequently than nasal polyps.

217. d) Cystic fibrosis

218. e) Diagnostic criteria for cystic fibrosis are the following:

Presence of typical clinical manifestations (respiratory, GI, or GU) **or** history of CF in a sibling or positive newborn screening test

**PLUS**

Laboratory evidence for CFTR (cystic fibrosis transmembrane regulator) dysfunction: Two elevated sweat chloride concentrations performed on separate days **or** identification of two CF mutations **or** an abnormal nasal potential difference measurement

219. b) Sexual function is usually unimpaired. Sexual development is often delayed by an average of 2 years. Females may experience secondary amenorrhea. Pregnancy is well tolerated in CF women with good pulmonary functions.

220. b) Hyperuricemia and colonic stricture can occur due to the use of very large doses of pancreatic extracts.

221. c) 5-6 years of age; by this time most patients have obstructive pulmonary disease. A decrease in **mid-maximal flow rate** is an early finding that suggests small airway obstructions.

222. a) Restrictive lung changes occur **late** in the disease process (i.e., decreased total lung capacity and vital capacity) and are due to extensive lung injuries and fibrosis.

223. b) Mucoid forms of pseudomonas; the presence of Staphylococcus aureus, Pseudomonas aeruginosa, or Burkholderia cepacia organism suggests CF.

224. b) Gynecomastia

225. e) Hyperglycemia (systemic); growth retardation (systemic, inhaled)

226. d) GI bleeding

227. a) Interstitial nephritis

228. c) Goiter

229. e) Complex cyanotic heart disease with decreased pulmonary blood flow
230. d) Acyanotic lesions with increased pulmonary blood flow
231. a) Pericardial thickening and constrictive pericarditis
232. b) Mitral valve prolapse and aortic root dilatation
233. c) VSD
234. b) Chromosome 7; supravalvular aortic stenosis and hypercalcemia
235. e) Chromosome 20; peripheral pulmonic stenosis and bile duct hypoplasia
236. c) Chromosome 12; pulmonic stenosis
237. d) Chromosome 15; aortic root dilatation
238. a) Chromosome 6; craniofacial, limb defects, and PDA.
239. b) VSD
240. c) Pulmonary valvular insufficiency also occurs due to severe pulmonary hypertension.
241. b) VSD
242. b) A short systolic murmur is noted along the left sternal border at the 3rd and 4th intercostal spaces; murmur is transmitted to the left infrascapular area.
243. c) Apical murmur is late systolic and may be associated with a click.
244. a) A low-pitched decrescendo diastolic murmur is noted at the upper and midleft sternal border
245. d) A high-pitched ("cooing dove"), apical holosystolic murmur; moderate to severe insufficiency causes low-pitched, mid-diastolic rumbling murmur.
246. e) A rumbling apical diastolic murmur is followed by loud 1st sound; 2nd sound is loud and split.
247. c) Avascular necrosis of the hips has been reported.
248. e) Streptococcus pneumoniae (over 60% of cases); answers (a), (b), (c), and (d) also cause infections in post-splenectomy patients.
249. a) The children with congenital polysplenia have normal functions of spleen.
250. e) RBC inclusions in peripheral blood smears, 'pits' on interference microscopy, and decreased uptake of technetium on spleen scan indicate splenic hypofunctions.
251. a) It is better to postpone the operation **until 5 years of age**. Vaccine is less effective in children less than 2 years of age and in immune-suppressed patients. Oral penicillin V is given (125 mg twice daily in less than 5 years of age and 250 mg twice daily for children 5 years or older).
252. b) Gastrointestinal cancer and ovarian tumors
253. e) Bilateral acoustic neuromas and meningiomas
254. c) Myocardial rhabdomyoma and fibroangiomatous nevi
255. a) Angioma
256. d) Hemangioblastoma of the cerebellum and retina, renal cancer, and pheochromocytoma
257. a) Parathyroid adenoma, pancreatic islet cell tumor, and pituitary adenoma carcinoid are noted in Wermer syndrome **(multiple endocrine neoplasia, type I)**.
258. b) Medullary carcinoma of the thyroid, hyperparathyroidism, and pheochromocytoma are noted in Sipple syndrome **(multiple endocrine neoplasia, type II). Multiple endocrine neoplasia type III** has Marfan habitus, mucosal neuromas, pheochromocytomas, medullary carcinoma of thyroid, and neuropathy.
259. e) Leukemia and lymphoma
260. c) Breast cancer and extragonadal germ cell tumors
261. d) Schwannoma and myelodysplasia
262. d) 35%; the incidence of reflux does **not** depend on the grade of reflux or sex of the index child.
263. c) 12%
264. e) 50%
265. e) UPJ obstruction
266. a) Intrinsic
267. a) Hypertension is **not** an usual presentation in patients with UPJ obstruction. Some children appears with hematuria after minimal trauma in UPJ obstruction.

268. b) In girls, ureteral duplication is almost always associated with ureterocele.

269. b) In boys, single ureter is oftenly present with ureterocele. Ureterocele is a cystic dilatation of the terminal ureter and is obstructive lesion because of pinpoint ureteral orifice.

270. b) 6-12 months of age

271. e) Seminoma (65% of cases)

272. c) Hepatitis A infection does **not** cause hepatocellular carcinoma. Hepatocellular carcinoma can occur with hepatitis C infection and chronic form of hereditary tyrosinemia.

273. b) Lungs and regional lymph nodes

274. e) If the testis does **not** descend by 6 months of age, it will remain undescended. The majority of the undescended testes descend spontaneously during the first 3 months of life.

275. e) Virilized female with congenital adrenal hyperplasia

276. d) 9-15 months of age

277. e) Indirect inguinal hernia

278. e) 'Acquired' or ascending undescended testis on the right side. It occurs between 4-10 years of age. He has descended testes at birth. The testis does not remain in the scrotum.

279. c) Failure of hormonal and/or mechanical factors cause an undescended testis.

280. b) A brisk cremasteric reflex causes retractile testis.

281. a) Incomplete disappearance of processus vaginalis causes 'acquired' or ascending undescended testis because spermatic cord does not grow as rapidly as the child.

282. d) Vanishing testis (or atrophy) is due to the testicular torsion in utero.

283. a) The boy has right **testicular torsion**. This is the most common cause of testicular pain in boys **12 years of age and older**. However, torsion of the appendix testis is the most common between **2 and 11 years of age**. Answer (e) is the therapy for the **torsion of the appendix testis**. Testicular torsion is surgical emergency. Therefore, prompt surgical exploration, detorsion of the testis, and scrotal orchiopexy are the treatment of choice.

284. e) Ultrasonography of the abdomen should be performed to rule out abdominal or retroperitoneal mass in **boys younger than 10 years of age with varicocele or presence of varicocele on the right side**.

285. e) Laparascopic detorsion of the right ovary is performed after the diagnosis of ovarian torsion is made by color Doppler flow studies. The oophoropexy (placation) of the contralateral adenexa may be indicated. Ovarian torsion is associated with ovary cyst or tumor.

286. e) Amenorrhea, disordered eating, and osteoporosis

287. a) Renal (i.e., unilateral absence of kidney or ureter, 27% of cases); next is skeletal, especially vertebral.

288. b) This syndrome represents the congenital absence of vagina; the patients have normal vulva, phenotype, and karyotype (46, XX).

289. e) Multifactorial/polygenic

290. b) Nephrogenic diabetes insipidus is not part of Wolfram syndrome.

291. b) Low (serum sodium, serum uric acid); high (urine sodium, vasopressin level); normal or high (intravascular volume); normal or low (urine output).

292. c) Low (urine sodium, intravascular volume, vasopressin level); high (serum sodium, urine output, serum uric acid level).

293. a) Low (serum sodium, intravascular volume, vasopressin levels); high (urine output); very high (urine sodium); normal or high (serum uric acid levels).

294. d) SHOX excess syndrome causes childhood tall stature. Answers (a), (b), and (e) also cause childhood tall stature.

295. d) Testicular feminization syndrome causes tall stature in adulthood.

296. e) Reassurance; answer (a) is used for boys with tall stature (i.e., predicted adult height is more than 3 SD above the mean that is **78 inches or 198 cm**); answer (b) is used in girls with tall stature.

297. e) Reassurance; answer (a) is used for girls with tall stature (i.e., predicted adult height is more than 3 SD above the mean that is **71 inches or 180 cm**). Estrogen mediates epiphyseal fusion in both girls and boys. The medication therapy is also indicated if both boys and girls with tall stature have **significant psychosocial problems**.

298. d) GH, IGF-I levels, and results of other endocrine studies are normal. Sotos syndrome is not endocrine disorder. The children have accelerated growth rate for the first 4-5 years of life and then return to normal rate. Most patients have some degree of mental retardation. Osseous maturation is compatible with the patient's height. They have difficulties in sports activities due to clumsiness and awkward gait. Puberty usually occurs in normal time but may occur slightly early.

299. c) Papillary carcinoma (80% of cases)

300. a) Neuromas and endocrine symptoms appear later in childhood. MEN, type II B includes mucosa neuroma syndrome, medullary carcinoma, and pheochromocytoma.

301. e) A positive Chvostek or Trousseau sign is present in patients with hypocalcemia secondary to hypoparathyroidism. They usually have low serum calcium (total and ionized), elevated serum phosphorus level, normal or low serum alkaline phosphatase, usually low 1, 25 $[\mathrm{OH}]_2$ $\mathrm{D}_3$, normal serum magnesium level, low serum PTH level, prolonged QT interval on the ECG, and calcification in basal ganglia (x-ray or CT scan).

302. e) Delayed and irregular teeth eruption, irregular enamel formations, and may be unusually soft teeth.

303. e) When hypoparathyroidism occurs with Addison disease, the serum calcium level may be normal. Hypocalcemia reveals after effective therapy of the adrenal insufficiency.

304. e) Detection of serum calcium levels in siblings is important to avoid unnecessary subtotal parathyroidectomy in patients with familial hypocalciuric hypercalcemia (familial benign hypercalcemia).

305. e) Oral prednisone (2 mg/kg/day) therapy corrects hypercalcemia and reduces serum level of 1, 25 $[\mathrm{OH}]_2$ $\mathrm{D}_3$ to normal.

306. d) Albright hereditary osteodystrophy (or pseudohypoparathyroidism)

307. e) A major surgery under general anesthesia in patients with adrenal insufficiency needs high intravenous dose of hydrocortisone like acute adrenal crisis. The dose of hydrocortisone should be increased 2-3 times during minor surgery or infection.

308. e) INH does **not** cause adrenal insufficiency. Mitotane can cause adrenal insufficiency. Mitotane is used in the treatment of adrenal carcinoma and refractory Cushing syndrome.

309. c) Serotype 12

310. b) Serotype 49

311. a) Hypertension (60% of cases); answers (b), (c), (d), (e), hypocalcemia, acidosis, and uremia are also potential complications of acute poststreptococcal glomerulonephritis.

312. a) Oral doxycycline is not used in mild papulopustular acne. Topical tazarotene, or nodular acne. Topical tazarotene can also used in comedonal acne. All topical applications are used.

313. a) Oral isotretinoin (1 mg/kg/day) is **not** used in mild papulopustular acne but is used in **severe** papulopustular acne.

314. a) Oral isotretinoin (1 mg/kg/day)

315. b) Renal ultrasonography should be performed to rule out genitourinary anomalies (20% of cases).

316. a) Unilateral renal agenesis

317. a) Spinal dysraphism (40% of cases)

318. b) Spinal bifida occulta; answer (a) is the most severe form of spinal dysraphism.

319. a) Organic (e.g., occult fracture, spondylolysis, scoliosis, kyphosis, tumor, and infection)

320. e) Plain x-ray of the spine (posteroanterior and lateral standing x-ray of the spine with right and left oblique views of the affected area)

321. e) Tall stature with diminished upper segment/lower segment ratio or an increased span to height ratio (i.e., more than 1.05) is the most consistent presenting feature in patients with Marfan syndrome. The **Steinberg sign** is that the thumb can be adducted across the palm. The wrist sign is that the thumb can overlap the fifth (or little) finger when encircling the wrist.

322. d) Nephrologist. However, neurologist can follow up the patient for neuromuscular hypotonia. Yearly evaluations are indicated for cardiac valvular disease, scoliosis, joint dislocation, and opthalmologic problems. Physical therapy may improve strength and hypotonia.

323. e) Hypogonadism

324. c) Fathers of sporadic Marfan syndrome cases are **usually 7 to 10 years older** than fathers in the general population. FBN1 is the fibrillin-1 locus resides within the long arm of chromosome 15.

325. c) 200 rads (2.0 Gy); the most obvious finding is lymphocytic depression due to bone marrow impairments.

326. d) 800 rads (8.0 Gy); the GI syndrome manifests with nausea, vomiting, diarrhea, then latent 1 week asymptomatic period followed by recurrence of GI symptoms, electrolyte imbalance, sepsis, and death.

327. e) 100 rads (1.0 Gy); **most patients** have symptoms of nausea and vomiting after 200 rads (2.0 Gy).

328. e) Malrotation with intermittent volvulus

329. e) A superior mesenteric vein located to the right of the superior mesenteric artery is a normal finding.

330. c) Intrauterine vascular accidents resulting in ischemic necrosis of the sterile bowel and resorption of the affected segment.

331. a) Failure to recanalize the lumen after the solid phase of intestinal development during the 4th and 5th weeks of gestation resulting in duodenal atresia.

332. e) Jejunal atresia; other associated congenital anomalies are renal anorectal anomalies.

333. b) Ladd band (or abnormal peritoneal folds) is connecting the cecum with the posterior abdominal wall and causing pressure on the 2nd part of duodenum from outside.

334. c) Hypochloremic metabolic alkalosis

335. a) A "double-bubble sign" (i.e., one bubble for the stomach and one bubble for the duodenum) is noted on plain abdominal x-ray.

336. e) A "triple-bubble sign" (i.e., one bubble for the stomach, one bubble for the duodenum, and one bubble for the jejunum) is noted on plain abdominal x-ray.

337. d) Absence of ganglion cells and large number of hypertrophied nerve bundles that stain positively with acetylcholinesterase are noted in submucosa that are obtained by rectal suction biopsy.

338. d) Hirschsprung disease (or congenital aganglionic megalcolon)

339. d) Turner syndrome. Hirschsprung disease is also associated with congenital hypoventilation ("Ondine curse") syndromes, urogenital anomalies, and cardiovascular anomalies.

340. e) The **Currarino triad** includes anorectal anomalies (e.g., ectopic anus, rectal stenosis), sacral bone anomalies (e.g., hypoplasia, poor segmentation), and presacral masses (e.g., anterior meningocele, teratoma, cyst).

341. a) Anal tone is normal in both conditions. Hirschsprung disease usually appears at birth but the functional constipation appears after 2 years of age. Answers (c) and (d) are possible in Hirschsprung disease but are absent in functional constipation. Answer (e) is normal in functional constipation and is abnormal in Hirschsprung disease.

342. b) In Hirschsprung disease, rectal biopsy reveals **increased** acetylcholinesterase staining. In normal children, rectal distension results in reflex decline in internal sphincter pressure.

343. e) Acute appendicitis. **The onset of an abdominal pain before the vomiting and fever suggests acute appendicitis**. Infectious enteritis **begins with vomiting** followed by the cramping abdominal pain due to hyperperistolsis.

344. a) Presence of more than 30 WBCs per high-power field in urine suggests urinary tract infections. Some children with acute appendicitis may have normal CBC counts and differential counts. Up to 30 WBCs and 20 RBCs per high-power field in urine have been noted in suppurative appendicitis. Presence of bacteria in the urine suggests UTI. Presence of **significant** proteinuria or cast indicates renal problems.

345. e) Urologic anomaly is also common in newborns with persistent cloaca.

346. d) Anal dilatations are started 2 weeks after the surgery and gradually increased to achieve the size of normal anus.

347. d) A stool softener is indicated to make stools soft, but to avoid both hard stools and diarrhea.

348. e) Idiopathic; answers (a), (b), (c), (d), intestinal parasites, malnutrition, meningocele, ulcerative colitis, and Ehlers-Danlos syndrome can cause rectal prolapse.

349. e) **No therapy is indicated in infants less than 2 years of age** without any predisposing disease because the condition is self-limited. Antibiotics are not useful. Occasionally, abscess is drained under local anesthesia. However, older children (more than 2 years of age) with a predisposing disease require combination of antibiotics that covers gram-negative organisms, anerobes and S. aureus. In addition to that, incision/excision and drainage in cases of sepsis and spreading cellulitis.

350. e) DNA analysis of specimens obtained by chorionic villus sampling is performed in the first trimester between **9-12 weeks of gestation**. Genetic amniocentesis is usually performed at approximately **15 weeks of gestation**.

351. e) To facilitate appropriate prenatal therapy of the female fetus.

352. d) Administration of dexamethasone to the mother (20 micrograms/kg prepregnancy maternal weight daily in two or three divided doses) of affected fetus is indicated. Dexamethasone readily crosses the placenta and suppresses secretion of steroids by the fetal adrenals, including secretion of adrenal androgens.

353. b) To prevent the virilization of external genitalia of the female fetus.

354. a) 6 weeks of age. Then, choronic villus biopsy is performed to determine the sex and genotype of the fetus. **Please remember, therapy is continued only if the fetus is affected female with CAH**. Some centers can make early diagnosis by DNA analysis of fetal cells from maternal plasma for sex determination and CYP 21 gene analysis (for frequently occurring mutations).

355. e) Unknown

356. a) The nonclassic form of CAH is **not** detected reliably. The adrenal insufficiency does **not** occur in nonclassic form of 21-hydroxylase deficiency. Genotying for CYP21 can improve specificity.

357. a) Transphenoidal pituitary microsurgery is the treatment of choice. Answer (b) or reoperation is performed in patients with relapse. Answers (c) is centrally acting serotonin antagonist that blocks ACTH release and is rarely used in children. Answer (d) is needed in patients with pituitary adenoma that does not respond to therapy or ACTH is secreted by ectopic metastatic tumor. Answer (e) is needed in patients with benign cortical adenoma.

358. d) Cushing syndrome is characterized by moon facies (i.e., rounded face, prominent cheeks, and flushed appearance).

359. e) Pubertal development is delayed; other clinical manifestations may include secondary amenorrhea after menarche, purplish striae on the abdomen, hips, and thighs, pathologic fracture, emotional disturbances, weakness, and headaches.

360. b) Nighttime salivary cortisol levels are **elevated** and may be used as screening test in obese children. **Please remember**, cortisol levels in blood are normally elevated at 8 AM and reduces to less than 50% by midnight **except in infants and young children in whom diurnal variations may be absent**.

361. b) Hypokalemia can occur; the levels of serum electrolytes are normal except hypokalemia.

362. a) Tall stature is noted in simple obesity.

363. b) Short stature is present in Cushing syndrome.

364. c) An elevated urinary excretion of cortisol level is always present in Cushing syndrome and is often present in simple obesity.

365. b) An elevated nighttime salivary level of cortisol is noted in Cushing syndrome.

366. a) Cortisol secretion is suppressed by oral administration of low doses of dexamethasone in simple obesity.

367. b) ACTH-independent Cushing syndrome

368. a) Pituitary Cushing syndrome (e.g., pituitary adenoma)

369. b) ACTH concentrations are suppressed in patient with ACTH-independent Cushing syndrome or a cortisol-secreting tumor (e.g., adrenal tumors).

ACTH concentrations are **very high** in patients with **ectopic ACTH-secreting tumors** and may be **normal** in patients with **ACTH-secreting pituitary adenomas**.

370. a) ACTH-dependent Cushing syndrome (e.g., pituitary tumors)

371. b) ACTH-independent Cushing syndrome (e.g., adrenal tumors)

372. d) A single, 8 AM testosterone level more than 0.7 mmol/L (20 mg/dL) in boys indicates that all of them will achieve testicular volume greater than 4 mL within the next 15 months. Answer (c) may distinguish these two conditions. Boys with answer (e), only 25% developed puberty by 15 years of age.

373. e) Human menopausal gonadotropin may be added; recombinantly produced gonadotropins stimulates growth of the testes and spermatogenesis.

374. e) Overhydration does not occur. Children younger than 3 years of age usually develop hypoglycemia. Children older than 3 years of age usually develop hyperglycemia but overall outcome is **unpredictable**. Children often show signs of dehydration due to vomiting secondary to ketosis, poor oral intake, and osmotic diuresis secondary to hyperglycemia. **Please remember**, infections are not more common in diabetic children than in nondiabetic children.

375. a) She should call her physician or nurse if the blood glucose remains elevated after **three** extra doses of insulin. A child with diabetes should go to the ER when there is persistent vomiting, moderate to large ketonuria, and blood glucose levels are more than 250/dL despite extra insulin doses.

376. e) Serum insulin levels should **not** be performed. The physician should perform general examination to evaluate hydration and to determine the presence of ketoacidosis. A child with diabetes mellitus should go to the ER with persistent vomiting and blood glucose level is less than 50-60 mg/dL, especially with ketonemia.

377. e) 5% glucose, 0.45% saline solution with 20 mEq/L of potassium acetate is given at 1.5 times maintenance rate.

378. b) 0.03 units/kg/hour insulin infusion is indicated when the blood glucose levels are 121-200 mg/dL. Answer (a) is correct when the blood glucose levels are less than 120 mg/dL. Answer (c) is correct when the blood glucose levels are 200-300 mg/dL. Answer (d) is correct when the blood glucose levels are 300-400 mg/dL. Answer (e) is correct when the blood glucose levels are 400 and above.

379. a) If glargine is used as the basal insulin, **full dose** is given in the evening before surgery. The intravenous insulin therapy is continued after surgery until the child takes the full oral feedings. Then, IV insulin is switched to subcutaneous insulin.

380. e) The Mauriac syndrome is due to **under-insulinization**. This syndrome is rare in patients with diabetes because of the availability of longer-acting insulins.

381. d) Malfunction of the hypoglossal nerve produces wasting, weakness, and fasciculations of the tongue.

382. e) Unilateral injury of the vagus nerve produces hoarse voice and weakness of the ipsilateral soft palate.

383. c) A glossopharyngeal nerve injury results in absence of gag reflex of the posterior pharyngeal wall.

384. b) Malfunction of the sensory fibres of trigeminal nerve results in absence of corneal reflex. In corneal reflex, afferent fibres are the branches of 5th cranial nerve and efferent fibres are the branches of 7th cranial nerve (facial nerve).
385. a) An injury to the accessory nerve causes paralysis of the sternomastoid and trapezius muscles.
386. c) A complete paralysis of the 3rd cranial nerve causes ptosis, dilatation of the pupil, displacement of the eye outward and downward, and impairment of adduction and elevation.
387. e) A paralysis of the 4th cranial nerve produces upward and outward deviation of the eye.
388. d) A paralysis of the 6th cranial nerve produces medial deviation of the eye and inability to abduct beyond the midline.
389. b) A paralysis of the motor function of the 5th cranial nerve causes absence of jaw jerk.
390. a) A bilateral paralysis of the 10th cranial nerve produces nasal regurgitation of fluids, pooling of secretions, and an immobile low-lying soft palate.
391. a) Average head growth is 0.50 cm during the 1st week of life.
392. c) 34-35 cm
393. b) 44 cm
394. c) 47 cm
395. e) URI
396. e) A normal 2-year-old child can produce **soft symmetric bruits**. Answers (a), (b), (c), and (d) produce increased intracranial pressure.
397. e) Arteriovenous malformations of the vein of Galen or middle cerebral artery produce **loud cranial bruits**. A loud or localized bruit needs further investigation.
398. e) Reassurance; retinal hemorrhages disappear spontaneously by 1-2 weeks of age, occur in 30-40% of all full-term newborn infants, more common in NSVD than in cesarean section, and are not associated with birth injuries or neurologic complications.
399. e) Reassurance; the size of anterior fontanel is normal.
400. d) 18 months of age
401. b) After the first 6-8 weeks of life
402. e) Reassurance; anterior fontanel may close normally as early as 9 months of age.
403. c) A broad forehead indicated hydrocephalus
404. a) The normal head circumference of a full-term newborn is about 34-35 cm.
405. b) A box-shaped skull or square shaped skull indicates chronic subdural hematomas.
406. b) Dilated pupil is **not** part of Horner syndrome.
407. a) Lumber tap is contraindicated when the platelet count is less than 20,000 because it can cause spontaneous bleeding in the subarachnoid or subdural space. Rarely, critical illness is also contraindication of LP.
408. e) A crying and struggling patient has increased opening pressure in CSF. The normal opening pressure of CSF in recumbent and relaxed position is about **100 mm of fluid** and in flexed lateral decubitus position is **60-180 mm of fluid**.
409. b) Type II diabetes
410. a) Rhabdomyolysis; answers (b) and (c) are noted in ICU patients with hypophosphatemia; answers (d) and (e) are noted in patients with chronic hypophosphatemia.
411. e) Severe hypophosphatemia can cause dysfunction of WBCs and platelets, ataxia, paresthesias, and coma. Long-term phosphorus deficiency causes rickets in younger children and osteomalacia in older children.
412. c) Decreased renal acid excretion results in decreased serum bicarbonate concentration. If the respiratory alkalosis resolved quickly, patients develop metabolic acidosis that resolves over 1-2 days by increased acid excretion by the kidneys.
413. c) Acidemia causes potassium to move from the intracellular space to the extracellular space.
414. e) Children with Gitelman syndrome do not need calcium supplementation. Bartter syndrome is usually associated with hypercalciuria and often with nephrocalcinosis. Gitelman syndrome has high urinary magnesium losses and low urinary calcium losses.
415. d) Both the syndromes have normal blood pressure.
416. a) Autosomal recessive
417. e) Moderate mental retardation is noted in about 50% of cases. Children with pseudohypoparathyroidism type 1A have the phenotype features of Albright hereditary osteodystrophy. The presence of brachydactyly is due to shortened metacarpals and metatarsals.

418. a) Measurement of urinary cAMP after infusion of synthetic PTH is the diagnostic test for **pseudohypoparathyroidism in which there is no increase in urinary cAMP**, as normally occurs due to G protein-mediated activation of adenyl cyclase after PTH binds to its receptors. In pseudohypoparathyroidism there is normal production of PTH but lack of response at the target organs. Answers (c), (d), and (e) are the findings in patients with pseudohypoparathyroidism.

419. b) **High serum calcium levels** produce psychiatric symptoms, ventricular arrythmias, hypertension, decreased QT intervals, polyuria, nephrocalcinosis, renal failure, hypernatremia, and pancreatitis. **However, pancreatitis causes hypocalcemia**. Infants with hypercalcemia appear with poor feeding, vomiting, and failure to thrive.

420. e) **Hydration with normal saline** is followed by the use of **loop diuretic** that enhances calcium excretion. **Glucocorticoids** (e.g., prednisone) decreases intestinal absorption of calcium by blocking the action of 1, 25-dihydroxyvitamin D and especially effective in hypercalcemia secondary to vitamin D intoxication and subcutaneous fat necrosis. **Calcitonin** reduces calcium by inhibiting bone resorption. **Biphosphonates** inhibits bone resorption through their effects on osteoclasts. **Hemodialysis** is useful in patients with hypercalcemia and renal failure. Chronic hypercalcemia is treated with **diet with low calcium and vitamin D**.

421. a) Asymptomatic

422. b) Hypomagnesemia produces flattened T waves and prolonged ST segments. Answers (a), (c), (d), and (e) are the dominant clinical manifestations of **hypomagnesemia secondary to hypocalcemia**. Arrythmias usually occur in patients with an underlying heart disease.

423. a) Gitelman syndrome produces hypocalciuria.

424. b) Bartter syndrome produces hypercalciuria and secondary nephrocalcinosis. Both Gitelman and Bartter syndromes produce hypokalemic metabolic alkalosis and hypomagnesemia secondary to renal magnesium losses.

425. e) Infant of diabetic mother; answers (a), (b), and (d) can cause transient hypomagnesemia in newborns; answer (c) causes hypermagnesemia due to maternal magnesium sulfate therapy.

426. c) Estrogen does not cause respiratory alkalosis. However, caffeine causes respiratory alkalosis.

427. c) Salicylates directly stimulate the respiratory center and often concurrently produce metabolic acidosis.

428. a) Sepsis causes respiratory alkalosis probably due to cytokine release.

429. b) Pain, stress, panic, or anxiety causes psychogenic hyperventilation.

430. b) Suffocation (little over 50% of cases); 2nd most common is MVA (about 22%)

431. d) MVA is the most common cause of injury death in children and adolescents.

432. e) Burns grater than 10-15% of the body surface area and inadequate home situation are also indications of hospitalization.

433. a) Children with burns greater than 15% body surface area should **not** receive oral fluid therapy due to ileus. **A nasogastric tube** should be placed to avoid aspiration. **A Foley catheter** should be inserted to measure urine output in all children who need intravenous (IV) hydration. All wounds should be wrapped with **sterile towels**. If hypoxia or carbon monoxide poisoning is suspected, **100% oxygen** should be given. **An adequate airway** should be maintained.

434. d) Teaching of biobehavioral technique and coping strategies before cycle develops involving **negative** experience with health care workers. In severe cases, intravenous opoids and PCA (patient-controlled analgesia) are used. Amitrypline enhances sleep and effectiveness of opioids. Acupuncture may be considered for pain.

435. b) In **P**rader-Willi syndrome, the deletion is always of the paternally derived chromosome 15 (**P** and **P**) when there is deletion.

436. a) In Angelman syndrome, the deletion is always of the **maternally derived** chromosome 15 when there is deletion.

437. d) Sweaty feet, acrid odor in isovaleric acidemia

438. c) Maple syrup odor in MSUD

439. a) Hops-like odor in Oasthouse urine disease

440. b) Rotting fish odor in trimethylaminuria

441. c) Mongolian spots appear at birth as slate blue, well demarcated areas of pigmentation on the buttocks and back.

442. d) Lanugo appears at birth as fine, soft, immature hair on the scalp, brow, and face in premature infants.

443. b) Erythema toxicum appear 1-3 days after birth as small, white, occasionally vesicopustular papules on an erythematous base on the face, trunk, and extremities.

444. a) Benign pustular melanosis appears at birth as vesicopustular eruption on the neck, back, chin, palms, soles, and extremities.

445. c) Aplasia cutis congenita also occurs in trisomy 13, chromosome 4 deletion, or autosomal dominant inheritance.

446. e) Tufts of hair over the lumbosacral spine also noted in sinus tract or tumor (e.g., lipoma, teratoma).

447. a) Excessive skin fragility and extensibility with joint hypermobility are also noted in Marfan syndrome, disorders of collagen synthesis, or congenital contractural arachnodactyly.

448. b) Amnioniotic bands can also cause disruption of the skin; amputation, ring constriction, or syndactyly of the extremities; abdominal or thoracic wall defects.

449. d) Wormian bone formations are also noted cleidocranial dysostosis, lacunar skull, and sometimes, Down syndrome.

450. c) Hydrocele. Transillumination is negative in hernia.

451. b) In neonates with sinus bradycardia, heart rate is less than 90 beats/minute.

452. c) After neonatal period, heart rate less than 60 beats/minute represents sinus bradycardia

453. a) In neonates with SVT, heart rate is usually more than 230 beats/minute with abnormal P-wave axis. In other age groups with SVT, heart rate is above 180 and up to 300 beats/minute.

454. e) Reassurance

455. e) Reassurance

456. b) Renal (e.g., hydronephrosis, multicystic-dysplastic kidneys)

457. e) Renal vein thrombosis can occur in patients with antithrombin III deficiency, protein C deficiency, and in infants of diabetic mothers.

458. e) Eyes blinking. Apgar scores also include muscle tone. The reflex irritation (e.g., grimace, cough, or sneeze) is response to catheter in nostrils after the clearance of oropharynx.

459. b) Right pneumothorax. Answer (e) is wrong because the selective intubation into the left main bronchus is very difficult because of the anatomical position. Other answers are easy to understand.

460. e) Breast-feeding jaundice occurs after the 7th day of life, peaks during the 2nd-3rd weeks of life, and bilirubin reaches as high as 10-30 mg/dL.

461. a) Intravenous $D_{10}$ glucose water.

462. a) Oral feeding with formula or breast milk should be started **as soon as possible** and continued every 3 hour intervals in infants of diabetic mother if they are clinically well and normoglycemic.

463. e) **Button batteries should be removed immediately** because they may cause esophageal mucosal injury within 1 hour of aspiration and involve all layers within 4 hours of aspiration.

464. b) **Asymptomatic patients with coin or blunt object lodged in the esophagus can be observed for up to 24 hours** in anticipation of passage of coin into stomach. Answer (a) is appropriate for symptomatic patients.

465. d) In asymptomatic patients, meat impactions in the esophagus can be observed up to 12 hours. Intravenous glucagon can be used in patients without prior esophageal surgery to fascilitate the passage of distal esophageal food boluses by decreasing the lower esophageal sphincter pressure.

466. a) In symptomatic patients, negative plain films indicate urgent endoscopic removal of the radiolucent foreign bodies (e.g., plastic, glass, wood, aluminum, and bones).

467. b) Early CT scan improves the diagnostic accuracy. CT scan is more sensitive and specific than ultrasonography. Abdominal distension indicates either perforation or obstruction. Once the diagnosis is established, the treatment is surgical appendectomy.

468. a) The CT scan of the abdomen is preferred in the diagnosis, localization, and percutaneous drainage of the abscess after appendectomy.

469. a) The newborn most likely had meconium aspiration because the child was depressed and required resuscitation at birth.

470. b) Cerebral palsy because the newborn has stage 3 hypoxic-ischemic encephalopathy. The stage 1 patients have good prognosis. The stage 2 patients have variable prognosis. The seizures are present in stage 2 and 3.

471. b) Hypokalemia. Chronic administration of furosemide also causes hyponatremia, and 'contraction alkalosis'.

472. b) Furosemide causes hyperuricemia; it also causes renal stones, GI intolerance, dehydration, hypokalemia, hyponatremia, and 'contraction alkalosis'.

473. b) Digoxin does not causes ototoxicity. Digoxin also causes vomiting, diarrhea, arrythmias, lethargy, vertigo, and photophobia.

474. e) Hypokalemia and hypercalcemia enhances digoxin toxicity.

475. c) Intrauterine P-RBCs transfusion

476. a) Zidovudine (AZT) and protease inhibitors

477. b) Folate and vitamins

478. e) Amnioinfusion

479. d) Betamethasone

480. d) Reassurance; petechiae occurs due to sudden increase of intrathoracic pressure as a result of normal delivery.

481. e) Reassurance. Linear fractures are the most common type of skull fractures. Patients are asymptomatic and require no treatment.

482. e) Elevation of the severely depressed skull bones are indicated to avoid cortical injuries.

483. b) Depressed fracture of the skull (right parietal bone)

484. c) When mother is addicted to opiates, narcan should not be used because it precipitates acute neonatal withdrawal with severe seizure activities. Answers (a) and (b) are indications of narcan therapy. Artificial ventilation should continue before and during the administration of narcan.

485. d) Hypertonicity is absent. When the respiration begins, it is extremely slow. These clinical manifestations can occur in a newborn whose mother received heavy doses of morphine, meperidine (Demerol), barbiturates, fentanyl, or tranquilizers shortly before delivery or from anesthesia during the 2nd stage of labor.

486. e) CNS stimulant drugs are contraindicated because they are harmful and ineffective.

487. b) Between 3-5%

488. e) 100%

489. e) Musculoskeletal

490. d) Fetal crowding is usually due to reduced volume of amniotic fluid. In breech presentation, the incidence of deformities is increased 10 times.

491. e) During 3rd trimester, fetuses have rapid growth.

492. b) 3-5%; the risk of recurrence in congenital hip dislocation is also 3-5%.

493. b) Microcephaly is absent. **Costello syndrome** also includes macrocephaly, loose skin, hyperkeratotic palms and soles, coarse face, papillomas (e.g., perioral, nasal, anal), and postnatal growth deficiency.

494. c) Kabuki syndrome appears with long palpebral fissures, preauricular pits, and postnatal growth deficiency.

495. c) Longer than 18 hours. Previous answer was longer than 24 hours.

496. e) Previous pregnancy with positive GBS screening culture but the culture should be negative in current pregnancy. Intrapartum prophylaxis (IP) is also **not** indicated in planned cesarean section in the absence of labor or rupture membrane regardless of maternal GBS culture results/or negative vaginal or rectal GBS screening culture during current pregnancy regardless of intrapartum risk factors. IP is indicated when maternal GBS status is unknown and maternal fever 100.4°F or delivery less than 37 weeks of gestational age.

497. a) Marijuana

498. a) Alcohol is CNS depressants. Alcohol also causes talkativeness, grogginess, increases the pain threshold, diuresis (inhibiting pituitary ADH), vasodilatation, and hypothermia (centrally mediated).

499. a) He should be drunk **six or more times** in the past year or if he had problems with the police that indicates problem drinker.

500. e) Ingestion of other drugs along with alcohol. The legal definition of alcohol intoxication means blood ethanol level is 80 or 100 mg/dL. The adolescent is at risk of death when blood ethanol level is greater than 200 mg/dL.

501. d) Respiratory depression

502. d) Dialysis should be considered when the blood alcohol level is higher than 400 mg/dL.

503. e) Tetrahydrocannabinol (THC) fraction of the resin causes hallucination.

504. e) Chronic marijuana users lose interest in age-appropriate behavior.

505. c) Acute marijuana use. Hallucinations and distortions of body image occur rarely but usually occur during stress or with fever.

506. e) Marijuana decreases intraocular pressure up to 5 hours in normal persons and patients with glaucoma. Tachycardia is noted within 20 minutes after smoking marijuana and is followed 30 minutes later by transient hypertension that disappears by 3 hours.

507. b) Diazepam and alcohol potentiate sedation.

508. c) Cocaine and amphetamine potentiate stimulation.

509. a) Propranolol and phenytoin have antagonistic effects.

510. c) Prolonged bleeding from circumcision sites, bloody diarrheas, atopic dermatitis, and S. pneumoniae infections.

511. b) Chronic sinopulmonary disease and high incidence of cancer

512. d) Fatal varicella infections, redundant skin, hyperextensible joins of the hands and feet but an inability to extend the elbow completely, short and pudgy hands.

513. e) Intractable diarrhea, exfoliative erythroderma, hepatosplenomegaly, and lymphadenopathy.

514. a) Recurrent staphylococcal abscesses (e.g., skin, joints, lungs), persistent pneumatoceles, coarse facial features, and hemihypertrophy

515. e) Allergy; acute allergic reaction may increase absolute eosinophil counts more than 20,000 cells/microL and chronic allergy reaction may rarely increase absolute eosinophil counts more than 2,000 cells/microL.

516. a) Idiopathic

517. b) Cardiac disease due to endomyocardial thrombosis and fibrosis

518. c) Corticosteroids; answer (a) or (b) is used when corticosteroids therapy fails.

519. a) Eosinophilia greater than 1,500 cells/microL persisting more than 1 year is an incorrect answer.

520. e) Bone marrow transplantation. Answer (a) is used before bone marrow transplantation. Answer (b) is used for aspergillus infections. Answer (c) is used for granulomas. Answer (d) is used for prophylaxis of infections.

521. e) Bone marrow transplantation. Answer (a) therapy improves the clinical conditions of some children when they are stable.

522. c) Large inclusions in all nucleated blood cells that is seen on Wright-stained blood films and are accentuated by peroxidase stain.

523. e) LAD-1 is diagnosed by flow cytometric measurements of surface CD1 1b in stimulated and unstimulated neutrophils using monoclonal antibodies.

524. d) LAD-2 is diagnosed by lack of sialyl-Lewis X on the neutrophils.

525. a) Myeloperoxidase (MPO) deficiency is diagnosed by deficiency of neutrophils and monocytes MPO.

526. b) For screening test of chronic granulomatous disease, DHR test is replacing nitroblue tetrazolium (NBT) dye test. DHR detects oxidant production by increasing fluorescence when oxidized by $H_2O_2$.

527. c) Allergic rhinitis has transverse nasal crease due to allergic salute (i.e., an upward rubbing of the nose with an open pump or extended fingers). Answer (a) is known as **allergic gape**. Answer (b) is known is **allergic shiners**.

528. b) This girl has allergic rhinitis. A thick, purulent nasal secretion indicates an infection.

529. d) Bed linen and blankets should be washed every week in hot water (**more than 130°F**). Answer (c) is the most effective strategy for the reduction of mite allergen. The avoidance and removal of allergens are indicated.

530. c) About 60% of patients with allergic rhinitis have asthma and even those who do **not** manifest with bronchial hyperresponsiveness. Chronic sinusitis is a common complication of allergic rhinitis.

531. c) Anticonvulsants (e.g., phenytoin, phenobarbital, carbamezepine) increase the metabolism of glucocorticoids.

532. b) Rifampin enhances glucocorticoid clearance.

533. d) Ketoconazole and oral contraceptives delay glucocorticoid metabolism.

534. a) Erythromycin and clarithromycin delay glucocorticoid clearance.

535. a) Long-term inhaled glucocorticoid therapy has no effect on adult attained height or on bone mineral density. However, this therapy decreases the height by 1.1 cm in the first year of therapy indicating that the growth suppression is transient phenomenon.

536. b) Local immunosuppression

537. e) Hyponatremia is absent.

538. e) Pulse oximetry is indicated because frequent beta-agonist therapy can produce ventilation-perfusion mismatch and hypoxia. Hypoxic patients should receive oxygen therapy.

539. a) Hypotension. Blood pressure should be monitored every 10-15 minutes during the infusion and for up to 90 minutes after the infusion.

540. e) Fluid above maintenance is a wrong answer because asthma increases ADH secretions.

541. d) IM magnesium sulfate should not be given.

542. e) Heliox is used in hospitalized patients. Inhaled beta-agonist should be given every 20 minutes for 1 hour, if needed, systemic (oral or IV) glucocorticoid is given. Inhaled ipratropium may be added if the 1st dose response of beta-agonist is inadequate.

543. a) Immunizations neither decrease nor increase the development of asthma. All childhood immunizations should be given to all asthmatic children including varicella and annual influenza vaccines. An early life microbial exposures may be associated with reduced allergen sensitization, atopic dermatitis, asthma, and bronchial hyperresponsiveness.

544. e) Glucocorticoids decrease IgG levels.

545. a) Patients with late-onset morbilliform rashes with amoxicillin are not at risk for IgE-mediated reactions to penicillin and do not require skin testing before penicillin therapy. Carbapenems (e.g., imipenem, meropenem) have high degree of cross reactivity with penicillin and are another class of beta-lactam antibiotics. Only aztreonam can be used safely.

546. a) **Nonvesicular**, polymorphous rash primarily over the trunk is noted in patients with a Kawasaki disease. Answers (b), (c), (d), and (e) are the manifestations of **acute febrile phase**, which usually last 1-2 weeks, of Kawasaki disease.

547. e) ESR returns to **normal** in convalescent phase that is 6-8 weeks after the onset of illness. Anorexia, irritability, and conjunctival injection may persist in **subacute phase when there is highest risk of sudden death**.

548. a) The platelet count is normal in the 1st week of illness, then rapidly increases by 2nd-3rd weeks of illness. Elevated C-reactive protein and other acute phase reactants are noted in acute phase of the disease. Antinuclear antibody and rheumatoid factor are absent. Sterile pyuria, CSF pleocytosis, and mild elevations of hepatic transaminases may be present.

549. b) **First echocardiogram** should be performed **at the time of diagnosis**. If the result is normal, **the 2nd echocardiogram** should be performed **after 2-3 weeks** of illness. If both the results are normal, the **3rd echocardiogram** should be performed **by 6-8 weeks** after the onset of illness. If the result is normal, there is no need to repeat the test again.

550. e) Consult with pediatric cardiologist

551. b) Wegener granulomatosis should be suspected in a child with chronic sever sinusitis, pulmonary granulomas, and nephritis.

552. a) S. aureus produces **TSST-1 toxin** that is the most common cause of toxic shock syndrome. However, TSST-1-negative strains have been isolated from patients with TSS (especially nonmenstrual) i.e., **enterotoxin** has role in producing TSS.

553. a) Toxic shock syndrome

554. a) Menstruation and tampon use/or abscess

555. c) Nafcillin or first-generation cephalosporin is the drug of choice. Clindamycin is added in unresponsive cases. Fluid therapy should be very aggressive. Inotropic agent is used for hypotension. Corticosteroids and intravenous immunoglobulin are used in severe cases. Drainage of the vagina is indicated in tampon-induced menstrual TSS.

556. d) Vicilin and conglutin are proteins of peanuts.

557. c) Ovomucoid is the protein of eggs.

558. b) Casein and beta-lactoglobulin are proteins of cow's milk.

559. a) Paralbumin is the protein of fish.

560. c) Avoid cow's milk until 1 year of age

561. b) Renal injury

562. b) Hepatic injury or failure

563. e) Gentamicin does not cause neutropenia.

564. c) Severe congenital **neutropenia** or Kostman syndrome (or disease)

565. a) Diarrhea usually occurs.

566. e) The patients with cartilage-hair hypoplasia appears with **macrocytic** anemia, hyperextensible fingers, abnormalities of spine, and increased rates of cancer.

567. e) Staphylococcus aureus and gram-negative bacteria are the most common organisms.

568. e) The patients with leukoencephaly manifest with **decerebrate** posturing. MRI or head CT scan reveals multifocal areas of white matter degeneration with necrosis. Leukoencephalopathy occurs exclusively in patients who received cranial irradiation or intrathecal chemotherapy.

569. b) Driver error (75-80% of cases); alcohol is a factor in approximately 33% of cases.

570. a) Automobile and motorcycle accidents

571. b) Diabetes insipidus. Obesity is correlated with diabetes mellitus and is a major risk factor for cardiovascular disease in adulthood.

572. c) A child is considered overweight when the BMI is more than 85th percentile and is considered obese when the BMI is more than 95th percentile.

573. a) Low or below average levels of serotonin 5-HT (hydroxytryptamine) or the metabolite 5-HIAA (hydroxyl-indoleacetic acid) may be associated with suicide due to poor impulse control.

574. d) Heterosexual youth is not a risk factor of suicide. Other community risk factors of suicide are local suicide and violent exposure rates, availability of firearms, suicide prevention programs, and supportive social networks.

575. a) Unknown

576. e) NEC

577. a) Multifactorial but the exact cause of NEC is unclear.
578. a) Gastric retention with abdominal distension
579. d) Plain abdominal x-ray reveals pneumatosis intestinalis that is a diagnostic finding in patients with NEC.
580. c) Portal vein gas; answers (a), (b), and (e) are also noted in patients with NEC. Answer (d) is noted in patients with intestinal obstruction.
581. e) Umbilical catheters should be removed and peripheral intravenous access should be maintained.
582. e) A cross-table lateral abdominal x-ray reveals free air between abdominal wall and abdominal contents in patients with a perforation.
583. b) Perforation. Other indications for surgery are failure to respond to medical management, palpable mass, erythema of abdominal wall and a single, fixed bowel loop. Preferably, surgery should be performed after necrosis but before perforation and peritonitis.
584. a) Early use of steroids and indomethacin can cause of idiopathic focal intestinal perforation. These patients are less sick than those with NEC.
585. e) Hypertonia is noted during the phase 2 (middle of 1st week) and phase 3 (after the 1st week).
586. c) Seizures are absent in chronic form of kernicterus.
587. e) Sensorineural hearing loss is noted after first year of chronic form of kernicterus.
588. d) Exchange transfusion with PRBCs (packed red blood cells) should not be performed because P-RBCs contain high hematocrit (66%). However, a whole blood has hematocrit 33%.
589. c) The bronze baby syndrome has both direct and indirect hyperbilirubinemias with significant elevation of direct-reacting bilirubin. The discoloration is due to photo-induced modification of porphyrins due to cholestatic jaundice. The discoloration may last for many months.
590. a) PRBCs transfusion is indicated in asymptomatic infants with hemoglobin 7 or less, hematocrit 20 or less, and absolute reticulocyte count less than 100,000 cells/μL **or** infants require moderate to high mechanical ventilation (MAP more than 8 cm $H_2O$, $FiO_2$ more than 40%), hemoglobin 11 or less, hematocrit 35 or less **or** infants require minimal respiratory support (low mechanical ventilation, endotracheal/NCPAP more than 6 cm $H_2O$ and $FiO_2$ 40% or more), hemoglobin 10 or less, hematocrit 30 or less **or** infants require supplemental oxygen or CPAP (40% oxygen or less with any one of the following condition (e.g., undergoing operation, heart rate more than 180, respiratory rate more than 80, persistent episodes of apnea and bradycardia requiring bag and mask ventilation, increased oxygen requirement) with hemoglobin 8 or less and hematocrit 25 or less.
591. b) Furosemide does not cause gynecomastia. However, spironolactone causes gynecomastia.
592. b) Staphylococcus epidermidis (more than 50% of cases), S. aureus (20% of cases), and gram-negative bacilli (15% of cases)
593. a) Gram-negative organisms; mixed infection is common.
594. a) Abdominal symptoms are due to peritonitis. The distal infection is most likely either due to perforation of the bowel at the time of VP shunt operation or movement of bacteria through the bowel wall.
595. a) S. aureus
596. b) Prophylactic antibiotics do not reduce the infection rate for long-term indwelling urethral catheters.
597. c) Coagulase-negative staphylococcus and S. aureus infections are equally divided.
598. c) Staphylococcus aureus
599. d) S. aureus
600. e) There is no specific laboratory test. Cultures from abscess or vagina usually reveal S. aureus but are not required to make the diagnosis.
601. c) Hypospadius. This is a megameatal variant of hypospadius and may not be diagnosed until after a circumcision is performed due to normally developed foreskin.
602. d) Reassurance. Boys with distal hypospadius and no functional abnormalities do not need surgical repair.
603. e) Z-plasty is usually performed by 3 months of age.
604. e) Phenytoin therapy can cause gingival enlargement. Cyclosporin also causes gingival hyperplasia.
605. a) Vitamin D-dependent rickets can cause enamel hypoplasia.
606. b) Neutrophil chemotactic deficiency can be associated with juvenile periodontitis.
607. d) Immunosuppression causes oral candidiasis.
608. c) Kidney failure causes dysmorphic facial features in newborns due to pressure effect from oligohydramnios.
609. e) Premature eruption of permanent teeth is the most common cause of premature loss of primary teeth.

610. c) Porphyria causes a red-brown discoloration.

611. b) Neonatal hyperbilirubinemia may produce blue to black discoloration of the primary teeth.

612. a) Tetracycline produces brown-yellow discoloration and hypoplasia of the enamel.

613. e) Children may refuse to feed. The tongue may become lacerated and rarely, the tip is amputated that is called Riga-Fede disease. Natal teeth are noted at birth. Neonatal teeth erupt in the first month of life.

614. e) Turner syndrome patients do not have delayed eruption of the primary teeth. Other causes of delayed eruption of the primary teeth are familial, rickets, incontinentia pigmenti, Albright osteodystrophy or multiple syndromes, especially Down syndrome.

615. b) Pyloric stenosis is associated with epidermolysis bullosa and is usually manifest in early infancy.

616. d) High intestinal obstruction. When there is a history of polyhydramnios, the infant's stomach should be aspirated immediately after birth. Aspiration of 15-20 mL or more gastric contents, especially if it is bile stained, is suggestive of a high intestinal obstruction (i.e., duodenum, proximal jejunum).

617. c) Hypochloremic metabolic alkalosis

618. e) Leukopenia with thrombocytosis does not occur.

619. e) Bleeding from esophageal varices

620. e) Caloric requirements up to 150 kcal/kg/day

621. e) Hepatitis C vaccination is not available.

622. e) Infections and organ rejections are the most common complications after the early phase.

623. e) Thrombosis of great vessels causes primary nonfunction of the graft and can lead to death unless the graft is replaced within 48 hours.

624. a) Bacterial infections are most common, followed by viral (e.g., CMV, adenovirus), fungal, and rarely, parasitic (e.g., Pneumocystis carinii) infections.

625. b) Liver (6 to 24 weeks)

626. a) Yolk sac (2 to 6 weeks)

627. c) Bone marrow (24 to 42 weeks, and thereafter)

628. a) Diazoxide causes hyperglycemia, hypotension, and tachycardia.

629. d) Hydrochlorthiazide causes hyperuricemia, hypercalcemia, and hypokalemia.

630. b) Enalaprilat causes transient hypotension.

631. c) Labetalol causes bronchospasm, orthostasis, and dizziness.

632. a) Prazocin causes first dose, orthostatic hypotension.

633. b) V2 receptors located primarily in the collecting tubule, thick ascending limb of the loop of Henle, and the periglomerular tubules of the kidney.

634. b) Long arm of the X chromosome (Xq28)

635. a) Lymphocytic thyroiditis (Hashimoto thyroiditis, autoimmune thyroiditis) is the most common cause of thyroid disease. Endemic goiter is due to dietary deficiency of iodine. Iodide goiter is due to administration of iodine containg cough medicine.

636. e) Lymphocytic thyroiditis is the most common cause of acquired hypothyroidism.

637. b) Lymphocytic thyroiditis

638. c) Mitral regurgitation

639. e) The presence of TRSAb establishes the diagnosis of Graves disease and disappearance of TRSAb indicates remission of the disease. However, the measurement of TRSAb is **not** necessary to make the diagnosis of Graves disease but is useful in equivocal cases.

640. e) Advanced skeletal maturation, craniostenosis, and decreased bone density; bone density returns to normal after therapy. **Craniostenosis** is a malformation of the skull caused by premature closure of the cranial sutures. **Craniosynostosis** is a premature fusion of the sutures of the skull.

641. a) **Dandy-Walker syndrome** is a cystic dilatation of the fourth ventricle in the posterior fossa due to a developmental failure of the roof of the fourth ventricle. About 90% of patients have hydrocephalus. **Carpenter syndrome** is known as acrocephalopolysyndactyly. **Apert syndrome** is known as acrocephalopolysyndactyly. **Kleeblattschadel syndrome** is known as cloverleaf skull. **Crouzon disease** is known as dysostosis craniofacialis.

642. b) Corticosteroids characteristically produce posterior subcapsular cataract.

643. a) Wilson disease causes sunflower cataract but is not commonly seen in children.

644. d) In classic infantile galactosemia (galactose-1-phosphate uridyl transferase deficiency), the cataract is typically of the zonular type. In galactokinase deficiency, cataract is zonular and is the sole clinical manifestation.

645. c) Anterior capsular cataract is associated with persistent strands of pupillary membrane or vascular sheath of the lens.

646. e) Posterior capsular cataract is associated with persistent remnants of the primitive hyaloid vascular system (the common Mittendorf dot).

647. a) Cataract of prematurity appears with a cluster of tiny vacuoles in the distribution of Y sutures of the lens.

648. e) Hypercalcemia does **not** cause cataract.

649. a) Parvovirus B19 infection causes hydrops and severe anemia but does **not** cause cataract.

650. a) Amoxicillin

651. b) Azithromycin is also used in children in whom palatability or convenience of administration are also important.

652. e) Amoxicillin clavulanate, cefuroxime-axetil, or intramuscular ceftriaxone is the second-line treatment that is indicated when patients have an unsatisfactory response to first-line treatment.

653. d) Diarrhea; yogurt use can reduce diarrhea in some cases.

654. c) Cefuroxime-axetil is not palatable.

655. e) S. aureus

656. b) Prophylactic systemic antibiotic is not indicated in patients with Stevens-Johnson syndrome. Management of this syndrome is supportive and symptomatic. Antibiotic therapy is used for a secondary bacterial infection. Most authorities prefer **not** to use corticosteroid therapy that enhance mortality due to sepsis. The drug should be discontinued in drug related Stevens-Johnson syndrome. Intravenous immunoglobulin may be used. In females, vaginal lesion should be observed closely to avoid vaginal stricture and fusion. Opthalmologic consultation is mandatory because corneal scars can lead to vision loss.

657. e) Mycoplasma pneumoniae

658. d) Vancomycin does **not** cause Stevens-Johnson syndrome. The most common offending drugs are sulfonamides, NSAIDs (e.g., ibuprofen, salicylates, butazones), and phenytoin.

659. e) Pemphigus vulgaris usually first appears as painful oral ulcers, which may be the only finding of the disease for weeks or months, followed by large, flaccid bullae emerge on nonerythematous skin on the face, trunk, groin, axialla, and pressure points. Nikolsky sign is present.

660. b) Marcus Gunn phenomenon (i.e., sucking jaw movements causing simultaneous eyelid blinking) is due an abnormal innervation of the trigeminal (5th) and oculomotor (3rd) cranial nerves.

661. a) Mobius syndrome patients have normal mental development.

662. d) Turner syndrome does not cause microcephaly. Rubinstein-Taybi, Smith-Lemli-Opitz, fetal alcohol, and fetal dydantoin syndromes also produce microcephaly.

663. e) Aqueductal stenosis

664. b) Subarachnoid hemorrhage

665. b) Dandy-Walker malformation appears with prominent occiput and CT/MRI study reveals large posterior fossa cyst.

666. a) Chiari malformation (type II) appears with foreshortened occiput and MRI/CT scan reveals cerebellar tonsil protruding downward into the cervical canal.

667. c) Aqueductal stenosis appears with large head and MRI/CT scan reveals dilated lateral ventricles.

668. a) Chiari malformation (type I) is usually **not** associated with hydrocephalus. Type I includes herniation of cerebellar tonsils into the cervical canal. Pathogenesis is unknown.

669. e) Benign paroxysmal vertigo is rare beyond 3 years of age. This is a typical presentation. Neurological examination is unremarkable except for the finding of abnormal vestibular function noted during ice water caloric testing. The preferred therapy is diphenhydramine.

670. e) The preferred therapy for cyanotic spells is reassurance and support of the parents. Both parents should be consistent and not to reinforce the similar behavior after the child recovers from the spell. Parents should put the child safely in bed. Parents should **not** play, hold, or cuddle the child until recovery is complete.

671. e) The child has couth syncope. This is a typical presentation. The child did not remember the attack except coughing. The therapy includes aggressive management to prevent bronchospasms.

672. a) The **less important** causes of headache in children are refractive errors, sinusitis, strabismus, and malocclusion of the teeth.

673. a) Common migraine (migraine without aura)

674. c) Common migraine is not associated with aura. In addition to the symptoms already mentioned, the child may experience paleness, photophobia, osmophobia (strong dislike to odors), phonophobia (dislike to sounds), and paresthesias of the hands and feet. A strong family history (90% of cases) is suggestive of common migraine.

675. d) Classic migraine has an aura precedes the onset of headache. Distortions of body image is a predominant clinical finding.

676. b) Migraine variants include cyclic vomiting, acute confusional states, and benign paroxysmal vertigo. Vomiting may lead to dehydration and electrolyte imbalance.

677. a) Complicated migraine presents with neurologic signs during and after the headache. Some patients have syndrome of alternating hemiplegia (i.e., one side to the other).

678. e) Monosodium glutamate is added in Chinese food and causes headache. Migraines can be prevented by avoiding certain stimuli (stress, fatigue, anxiety, bright lights, loud noise, nuts, chocolates, hot dogs, Chinese food, alcohol, and oral contraceptives).

679. b) Autosomal dominant

680. d) Café-au-lait spots are noted in 100% of NF-1 patients. However, they are less common in NF-2.

681. a) Bilateral acoustic neuromas are the most distinctive findings in patients with NF-2.

682. a) Scoliosis; answers (d) and (e) are also noted in patients with NF-1.

683. e) Flashlamp-pulsed laser therapy

684. b) Conservative therapy is indicated in patients with Sturge-Weber disease who have normal or near-normal mental development and well-controlled seizure activities. Hemispherectomy or lobectomy may prevent the development of mental retardation in patients with recalcitrant seizures but the surgery should be performed during the 1st year of life.

685. e) High-dose intravenous methylprednisolone (30 mg/kg bolus followed by 5.4 mg/kg/hour for 24 hours) should be started STAT, even before the transport. If steroids are given within 3-8 hours after **injury of the spinal cord**, therapy should be continued for 48 hours. These are the signs and symptoms of spinal cord compression.

686. e) The child has no atlantoaxial instability. Atlantoaxial instability is defined as a distance **greater than 4.5 mm** between the odontoid process of the axis and the anterior arch of the atlas.

687. d) Tethered cord appears with a midline skin lesion (70% of cases) such as lipoma, tuft of hair, hyperpigmentation, dermal pit or cutaneous hemangioma. Plain x-ray usually reveals spina bifida in the lumbosacral region. In normal children, conus medullaris should be at the level of L1. In children with tethered cord, thickened ropelike filum terminale persists and pulls the conus at or below the L2 level.

688. d) Transverse myelitis. This is a typical manifestation of transverse myelitis. CSF protein may be slightly elevated. MRI is the preferred diagnostic study. About 60% of cases recover spontaneously over a period of weeks or months. Therapy includes bladder care and physiotherapy. Corticosteroids are **not** useful.

689. d) Chlamydia trachomatis infection does not cause transverse myelitis. Other infectious causes of transverse myelitis are Lyme disease, mumps, rubella, and influenza.

690. e) Retinopathy of prematurity

691. d) Retinoblastoma

692. c) Retinitis pigmentosa

693. a) Retinal phakomas (hamartomatous disorders) are noted in tuberous sclerosis.

694. b) Proliferative diabetic retinopathy

695. e) Surgery is the preferred therapy for infantile (or congenital) glaucoma that begins within the first 3 years of life.

696. e) The classic triad of infantile glaucoma includes epiphora (tearing), photophobia (sensitivity to light), and blepharospasm (eyelid squeezing). Only 30% of patients have signs and symptoms of classic triad. Other signs are visual impairment, conjunctival irritation, ocular enlargement, corneal enlargement, and corneal edema.

697. a) Optic nerve glioma (or juvenile pilocytic astrocytoma) is a benign and slowly progressive tumor.

698. e) Sensorineural hearing loss

699. e) Hemangiomas and dermoids are the most common benign tumors of the orbit.

700. c) Adenocarcinoma

701. e) Slipped capital femoral epiphysis

702. e) Idiopathic

703. e) Surgical therapy (i.e., correction of deformity with permanently placed internal fixation rods and posterior fusion of the involved vertebrae) is indicated when a curve is greater than 45 degrees.

704. e) Asymmetry of the posterior chest wall on forward bending **(the Adams test)**; answers (a), (b), (c), and (d) are also physical findings in patients with idiopathic scoliosis.

705. e) Standing posteroanterior and standing lateral radiograph of the entire spine should be obtained to determine the degree of curvature by measuring the angular relationships between the most tilted vertebrae at either end of the curve (the Cobb method). The CT scan and MRI are performed in patients with nonidiopathic scoliosis to determine the underlying cause.

706. b) The chiropractic therapy or exercise program does not improve the outcome of scoliosis. Transcutaneous electrical stimulation therapy is **not** effective. Curves greater than 45 or 50 degrees usually progress during adult life. Curves less than 30 degrees usually does not progress after complete skeletal maturation. Before menarche girls with curves between 20 and 30 degrees have a higher chance of progression than that of girls 2 years after menarche. Boys and girls usually have an equal risk of progression with same curves.

707. e) Figure-of-eight clavicle strap. The fracture usually heals in 3-6 weeks.

708. b) Posterior dislocation

709. c) Falling backward onto the outstretched arm with the elbow extended is the mechanism of supracondylar humeral fracture and elbow injuries.

710. d) Brachial artery; answers (a), (b), (c), and (e) can also occur in supracondylar humeral fracture.

711. e) Vascular and skeletal stability; orthopedic consultation should be performed immediately.

712. b) Distal radius

713. e) Neck injury

714. b) Anterior dislocation of the shoulder can also occur when a person falls onto an outstretched hand with a straight arm. There is a hollow region inferior to the acromion and bulge in the anterior portion of the shoulder.

715. e) Acromioclavicular separation of the right shoulder

716. a) About 15% of patients younger than 21 years of age with Down syndrome have AAI.

717. a) Dry, hot skin is absent in sports-related heat stroke but is present in **'classic'** heat stroke that is noted in chronically ill patients those who are exposed to summer heat waves.

718. e) Intravenous fluid (e.g., dextrose/saline solution) should be given at a rate of **800 mL/m2 in the first hour** in order to improve the intravascular volume.

719. d) Salt pills should not be used because they cause hypernatremia and delayed gastric emptying. Water (e.g., plain cold water) is adequate for exercise lasting less than 1 hour. Warm water should **not** be used because it causes delayed gastric emptying. Sports drinks usually contain 6-8% carbohydrate and can decrease nausea, bloating, and abdominal pain. Prepractice and postpractice weight can be useful to measure the fluid loss. Thirst is not an adequate indicator of dehydration because it appears at 2-3% dehydration that decreases atheletic performance.

720. e) Osteopenia and stress fracture can occur. A long-term persistence of osteopenia can lead to osteoporosis.

721. e) Estrogen replacement therapy, usually in the form of low dose oral contraceptive pills is recommended if amenorrhea persists for 6 months or longer. Bone mineral density should be measured to diagnose osteopenia. If amenorrhea persists more than 12 months, therapy with estrogen/progestin pills may be given regardless of the bone density findings. The American Academy of Pediatrics committee recommends not to give estrogen until 16 years of age. Estrogen therapy improves bone density and decreases adult height.

722. b) 1500 mg/day that is 300 mg/day more than the daily allowance for calcium in women with normal menstruation (i.e., 1200 mg/day).

723. c) Herpes simplex (herpes gladiatorum) and impetigo are contraindications to wrestling.

724. e) Knee injury

725. b) "Tennis elbow" or lateral epicondylitis is produced by repetitive contraction of the extensor muscles (e.g., extensoe carpi radialis brevis).

726. b) Hydrocephalus

727. d) Blue sclera

728. e) Genital hypoplasia and hypertelorism

729. c) Omphalocele

730. a) Renal cysts and intestinal atresia

731. d) Vitamin E deficiency; chronic cholestasis also causes vitamin A, D, and K deficiencies.

732. c) The normal ratio of serum vitamin E to total serum lipid is more than 0.6 in patients younger than 12 years and is more than 0.8 in patients 12 years and older. Vitamin E levels can be falsely elevated due to elevated blood lipid levels in patients with cholestasis.

733. e) Stagnant loop syndrome (blind loop syndrome, bacterial overgrowth syndrome) can occur after intestinal postsurgical adhesion. This syndrome causes both vitamin $B_{12}$ deficiency (e.g., megaloblastic anemia) and disaccharidase deficiency (e.g., steatorrhea that is pale, foul-smelling, bulky stools).

734. e) Metronidazole is initially given for 2-4 weeks. If there is a relapse, metronidazole is used for 4-8 weeks. A surgery is indicated in patients with a partial small bowel obstruction. Answers (a) and (b) may be used in older teenagers. Answers (c) and (d) can be used for gram-negative bacterial infections.

735. d) Breast milk has low levels of vitamin K. Breast milk also contains long-chain fats, free amino acids, glutamine, and growth hormone.

736. b) Gallstones (60% of cases) but gallstones are not found in patients with intact ileum. All answers are also complications of short bowel syndrome.

737. e) Bleeding is absent. Answers (a), (b), (c), and (d) are long-term complications of short bowel syndrome that also include late vitamin B12 deficiency (i.e., may not appear until 1-2 years of age).

738. d) Feeding colitis; pathogenesis is unknown but it is a benign condition; usually respond to hypoallergenic diet or to sulfasalazine. In neonates, stricture after NEC can produce bloody stools.

739. e) Protein **gluten** is found in wheat, rye, and barley. The activity of gluten resides within **gliadin** fractions which contain amino acid sequences (**motifs**) that sensitize lamina propria lymphocytes.

740. a) Failure to thrive; answers (b), (c), (d), and (e) are common symptoms of celiac disease.

741. a) Wasted muscles; answers (b), (c), (d), and (e) are common signs of celiac disease.

742. e) Small intestinal biopsy and histologic confirmation (i.e., villus atrophy, crypt hyperplasia, and surface epithelium injury) is the gold standard. A rechallenge with gluten is recommended for **children younger than 2 years** when the diagnosis is in doubt because other conditions can lead to flattened mucosa. A rechallenge with gluten is **not** recommended for children 2 years of age and older.

743. d) Lifelong, strict gluten-free diet (i.e., all wheat, rye, and barley products should be eliminated). The child should receive vitamin and iron. Pancreatic enzyme is useful to gain weight in the first few months of therapy.

**Corticosteroids are used in celiac crisis** (i.e., weight loss, severe diarrhea, hypocalcemia, and hypoproteinemia).

744. e) Reassurance; children **younger than 2 years** of age without any predisposing condition usually do not require any treatment because this condition is self-limited. Conservative management (observation) is accepted in this age group with fistula because it disappears spontaneously. Rarely, incision and drainage under local anesthesia are indicated in patients who are very uncomfortable. Antibiotics are not useful in this age group.

745. e) Observation is **not** appropriate for children 2 years of age and older with a predisposing condition. They should be treated aggressively.

746. a) Surgical treatment is indicated if medical therapies fail. This is the preferred surgical procedure for patients with rectal prolapse.

747. a) Laparotomy and internal fixation of the rectum to the presacral fascia is the preferred therapy in patients with procidentia and meningomyelocele. **Rectal procidentia** means extrusion of all layers of the rectal wall. **Rectal prolapse** means extrusion of mucosal layer of the rectal wall.

748. e) Cystic fibrosis

749. c) Elevated serum levels of trypsinogen

750. a) A qualitative examination of the stool for microscopic fat globules. Random stool samples can have both false-positive and false-negative results. Therefore, a 72-hour collection of stools for quantitative analysis of fat content is preferable. Stools should be kept in a freezer. **Normal fat absorption is greater than 93% of intake**.

751. e) Direct stimulation of the pancreas with secretion and cholecystokinin, use a triple-lumen tube to collect pancreatic secretion, and measurement of bicarbonate levels and enzyme activities (e.g., trypsin, chymotripsin, lipase, amylase).

752. a) Ventilation-perfusion mismatch (or decreased) i.e., alveolar $PO_2$ is lower (e.g., 60) than normal (e.g., 100), therefore blood that passes through this unit of alveoli achieve lower (e.g., 89%) than normal (e.g., 95-100%) oxygen saturation. Supplemental oxygen therapy increases alveolar $PO_2$ and arterial $PO_2$.

753. d) Infants have less outpatient visits for ear infection at 3 and 6 months for those who are sleeping supine.

754. a) Surgery. Antral choanal polyps do not respond to medical therapy and are not associated with underlying disease process. Answers (b), (c), (d), and (e) are not effective therapies.

755. e) Functional endoscopic sinus surgery includes removal of polyps and other associated nasal disease. Answers (a) and (b) provide some shrinkage in nasal polyps. Answers (c) and (d) do not shrink nasal polyps but reduce mucosal edema.

756. d) Rhinovirus

757. e) Otitis media (5-30% of cases)
758. d) Good handwashing; in hospitals, protective face shields can prevent hand-to-eye and hand-to-nose contacts.
759. a) Pertussis causes persistent or paroxysmal cough.
760. d) Allergic rhinitis causes itching, sneezing, and nasal eosinophilia.
761. b) Streptococcal nasopharyngitis causes nasal discharge that excoriates the nares.
762. e) Foreign body in the nose causes unilateral, foul-smelling nasal discharge.
763. c) Sinusitis causes persistent rhinorrhea or cough for more than 10-14 days, headache, facial pain, or periorbital edema.
764. e) Rhinitis medicamentosa is a rebound effect that produces a sensation of nasal obstruction when the medication is discontinued.
765. e) Diaphragmatic defect results in passage of intraabdominal air into the pleural cavity. This girl has catamenial pneumothorax.
766. a) Staphylococcus aureus; Mycoplasma pneumoniae infection can cause pneumothorax.
767. e) Rupture of thoracic duct during cardiac surgery for complex congenital heart diseases. Answers (a), (b), (c), and (d) can cause chylothorax.
768. b) Autosomal dominant
769. a) Autosomal recessive. Jeune syndrome is called asphyxiating thoracic dystrophy (thoracic-pelvic-phalangeal dystrophy).
770. c) **Narrow** foramen magnum causes respiratory dysfunction in patients with achondroplasia. Achondroplasia may also manifest with kyphoscoliosis during infancy, decreased anteroposterior diameter of chest with anterior cupping of the ribs, small lungs but normal functions except reduced vital capacity.
771. d) Balloon angioplasty
772. a) Pulmonary circulation is decreased significantly in patients with critical PS. They appear with right-sided heart failure.
773. e) Patients with critical AS manifest with hypotension and subsequently, total circulatory collapse. They appear with both left-sided and right-sided cardiac failure.
774. b) Secundum ASD (atrial septal defect)
775. e) Pulmonary stenosis (e.g., pulmonary valve or branch pulmonary artery) is common in patients with arteriohepatic dysplasia (Alagille syndrome).
776. d) Cardiac anomalies and aortic **coarctation**
777. a) CATCH 22 syndrome can be associated with tetralogy of Fallot, pulmonary atresia with VSD (a severe form of TOF), or interrupted aortic arch.
778. d) Cleft **palate**
779. c) Phrenic nerve injury causes diaphragmatic paralysis.
780. d) Recurrent laryngeal nerve injury causes vocal cord paralysis.
781. a) Sympathetic nerve chain injury causes Horner syndrome.
782. b) Hyponatremia causes seizures that are also produced by hypoglycemia, CNS ischemia, and emboli.
783. e) Spinal artery ischemia after repair of coarctation causes paraplegia.
784. b) Postcoarctectomy syndrome causes hypertension and mesenteric arteritis.
785. d) Repair of TAPVR (total anomalous pulmonary venous return) can cause pulmonary hypertension that can occur trisomy 21 and Norwood 1st stage operation.
786. e) ARDS postpump syndrome can be due to possible release of vasoactive substances but the exact mechanism is unknown.
787. a) SIADH produces hyponatremia.
788. c) Serous postpericardiotomy syndrome produces pericardial tamponade.
789. b) WPW syndrome most often present in patients with a normal heart.
790. a) In type 1 von Willebrand disease, **DDAVP** induces the release of VWF (von Willebrand factor) from the endothelial cells. **VWF concentrates** are used in type 3, 2A, 2B, 2N, 2M and type 1. **Both DDAVP and VWF** concentrates are used in type 1, 2A, and 2N. **Platelets** are used in PT-VWD (platelet-type pseudo VWD) and BSS (Bernard Soulier syndrome) VWD.
791. e) Idiopathic (autoimmune) thrombocytopenia
792. e) IVIG (0.8-1 g/kg/day x 1-2 days) therapy increases the platelet count (over 20,000) in 95% of patients within 48 hours. Prednisone (1-4 mg/kg/day) is used for 2-3 weeks or until a rise in platelet count over 20,000. The platelet transfusion in ITP is contraindicated unless life-threatening bleeding is present. The patients may have normal size platelet in peripheral blood smear and have normal number of megakaryocytes in bone marrow.

793. e) IVIG therapy may cause headaches and vomiting (i.e., aseptic meningitis)

794. e) Prednisone therapy may cause lymphopenia and neutrophilia.

795. c) Chromosome 11p deletion with sporadic aniridia may cause Wilms tumor.

796. b) Chromosome 13q deletion may cause retinoblastoma and sarcoma.

797. d) Dysplastic nevus syndrome may cause melanoma.

798. a) Xeroderma pigmentosa may cause basal and squamous cell cancers.

799. e) Fanconi anemia may cause leukemia.

800. b) EBV can cause B-cell lymphoproliferative disease in immunocompromised individuals, especially those with AIDS.

801. a) Hepatitis C virus can cause splenic lymphoma and hepatocellular carcinoma. Hepatitis B virus can cause hepatocellular carcinoma.

802. c) HHV8 is associated with Kaposi sarcoma, primary effusion B-cell lymphoma, and plasma cell variant of Castleman disease, all of which occur primarily patients with AIDS.

803. d) HPV causes cervical cancer.

804. e) Neonates with Down syndrome can develop transient leukemia. They do not need chemotherapy. They may need temporary transfusions. A close follow-up is indicated because 20-30% will develop typical leukemia within the first few years of life.

805. e) Cowden syndrome can be associated with Dysplastic gangliocytoma of the cerebellum (Lhermitte-Duclos disease).

806. c) Neurofibromatosis 1 can be associated with optic pathway gliomas, astrocytomas, and malignant peripheral nerve sheath tumors.

807. b) Neurofibromatosis 1 can be associated with vestibular schwannomas, meningiomas, spinal cord ependymomas, and spinal cord astrocytomas.

808. d) Tuberous sclerosis can be associated with subependymal giant cell astrocytomas and cortical tubers.

809. a) von Hippel-Lindau can be associated with hemangioblastoma.

810. b) Neuroblastoma may appear as a paraneoplastic syndrome of autoimmune origin presenting as ataxia or opsomyoclonus ("dancing eyes and dancing feet").

811. d) Abdomen (e.g., adrenal gland or retroperitoneal sympathetic ganglia); a firm, nodular mass is palpable in the flank or midline. The patient complains of abdominal discomfort. The plain x-ray and CT scan reveals a mass with calcification and hemorrhage.

812. e) Lung metastases are **rare**. Other common sites of metastasis are skin and lymph nodes.

813. e) Neuroblastoma state 4S manifests with dissemination to liver, skin, or bone marrow without bone involvement and a primary tumor with stage 1 or 2.

814. d) Biopsy of tumor can make the pathologic diagnosis. The levels of HVA and VMA are **elevated** in urine (95% of cases). If the primary tumor cannot be located, the diagnosis can be made with a typical clinical manifestation, elevated HVA and VMA in urine, and presence of neuroblast in bone marrow.

815. a) Rosettes of cells surrounding an inner mass of fibrillary material are characteristic of neuroblastoma.

816. b) The risk of recurrence is extremely **rare** in patients with acute poststreptococcal glomerulonephritis. In addition to penicillin therapy, the patient should be treated with sodium restriction, diuretic (e.g., furosemide), and antihypertensive (e.g., calcium channel antagonists, vasodilators, or angiotensin-converting enzyme inhibitors) agent.

817. e) A normal serum complement (C 3) is an indication for renal biopsy to rule out other disease condition. The serum C 3 level is usually reduced in the acute phase of poststreptococcal glomerulonephritis and returns to normal 6-8 weeks after onset. Renal biopsy can rule out SLE (systemic lupus erythematosus), membranoproliferative glomerulonephritis, and acute exacerbation of chronic glomerulonephritis.

818. b) Coombs test is negative in hemolytic-uremic syndrome (HUS). Other laboratory findings in HUS are hemoglobin (5-9 g/dL), presence of burr cell, helmet cells, fragmented RBCs, reticulocytosis, usually normal PT and PTT, proteinuria, low-grade microscopic hematuria. Barium studies reveal colonic spasm and transient early filling defects. The patients may have abnormal PT and PTT those are caused by vitamin K deficiency than by DIC.

819. a) Antithrombotic therapy has no benefit in patients with HUS.

820. e) Hemolytic-uremic syndrome

821. b) Plasmaphresis or administration of FFP (fresh frozen plasma) may exacerbate HUS caused by Streptococcus pneumoniae.

822. e) Acyclovir does not cause hemorrhagic cystitis. Other causes of hemorrhagic cystitis are dyes, insecticides, amyloidosis, radiation, and viruses (e.g., influenza A, polyoma BK virus, adenovirus type 11 and 21). Cyclophosphamide induced

hemorrhagic cystitis can be prevented by administration of cyclophosphamide in the morning followed by aggressive oral hydration throughout the day and the use of MESNA disulfide that inactivates cyclophosphamide metabolites.

823. e) Temperature usually greater than 101°F (38.3°C); other causes of transient proteinuria are stress and cold exposure. The mechanism is unknown. Proteinuria does not exceed 2+ on the dipstick. No investigation is indicated.

824. e) Orthostatic (or postural) proteinuria (60% of cases)

825. e) In children with persistent asymptomatic proteinuria, orthostatic proteinuria should be ruled out first. They have proteins (up to 1 g/24 hours) in the active (upright) position and absence of proteins in resting (supine) position. The cause is unknown.

826. b) Most children (90% of cases) with nephrotic syndrome have idiopathic cause and remaining (10% of cases) are secondary. Answers (b), (c), and (d) are idiopathic. The most common idiopathic type is minimal change disease. Answers (a) and (e) are secondary causes of nephrotic syndrome.

827. b) Spot urine protein to creatinine ratio exceeds 2.0. Other laboratory findings of idiopathic nephrotic syndrome are elevated serum cholesterol and triglyceride levels, microscopic hematuria (20% of cases), increased urinary protein excretion (40 mg/$m^2$/hour), and sometimes elevated serum creatinine levels when intravascular volume is reduced. Renal biopsy is not usually required to make the diagnosis.

828. c) Bartter syndrome patients have large protruding ears.

829. d) Renal functions are **normal** in patients with Bartter syndrome. Blood pressure is usually **normal** in this syndrome **except** antenatal form with severe salt wasting resulting in hypotension and dehydration. Other features of Bartter syndrome are nephrocalcinosis, elevated urinary sodium and potassium levels, and rarely, hypomagnesemia. Hypomagnesemia is more common in Gitelman syndrome.

830. e) Sodium bicarbonate should **not** be given in patients with Bartter syndrome.

831. a) Autosomal recessive

832. b) E. coli, answers (a), (c), (d), and (e) also cause UTIs; answer (a) especially causes cystitis.

833. e) Bladder hydrodistension and laser ablation of ulcerated areas, but no therapy produces sustained relief. The girl has interstitial cystitis. The cause is **idiopathic**. Cystoscopy reveals mucosal ulcers with bladder hydrodistension.

834. a) Acute hemorrhagic cystitis is frequently caused by E. coli.

835. a) Prompt plating of urine samples are important. If the urine samples are kept at room temperature over 60 minutes, overgrowth of bacteria is common. Urine sample should be kept in refrigerator until it can be cultured.

836. c) Urine collected in a sterile collection bag is reliable if the culture is negative. However, it is not reliable if the culture is positive, especially in girls and uncircumcised boys. If the culture is positive, patient should be symptomatic, urinalysis should be positive, and there should be one organism with a colony count greater than 100,000 to diagnose a presumed UTI.

837. e) Fluoroquinolones cause cartilage damage in children.

838. e) Trimethoprim-sulfamethoxazole is the preferred therapy for E. coli cystitis.

839. e) Nitrofurantoin is effective against both Klebsiella and Enterobacter organisms.

840. a) Cefixime is the preferred oral therapy for pyelonephritis **except Pseudomonas**. Cefixime is oral third-generation cephalosporin.

841. a) Ciprofloxacin (fluoroquinolone) is effective against Pseudomonas and is used in patients older than 17 years.

842. d) Ceftriaxone (50-75 mg/kg/day, not to exceed 2 g) **or** ampicillin (100 mg/kg/day) with an aminoglycoside (e.g., gentamicin 3-5 mg/kg/day). Aminoglycosides are especially effective against Pseudomonas.

843. c) Nitrofuratoin should **not** be used in children with a febrile UTI because it does not achieve significant renal tissue levels.

844. e) Trimethoprim-sulfamethoxazole or nitrofurantoin is preferred prophylactic agent against recurrent UTIs (one third of normal dose is used). Answers (a) and (b) can be used but they can cause breakthrough UTIs because of bacterial resistance.

845. d) 1 week after the termination of antibiotic therapy to ensure that the urine is sterile.

846. b) A follow-up urine culture should be performed periodically for 1-2 years, even when the child is asymptomatic because of the tendency of UTI to recur.

847. e) Application of corticosteroid cream to the foreskin three times daily for 1 month releases the phimotic ring in 66% of cases. Circumcision is indicated when medical management fails. A forceful retraction of the prepuce should **not** be performed because it causes a cicatrical scar that prevents subsequent foreskin retraction.

848. d) Lubrication of the glans and foreskin, then compress the glans and simultaneously placing distal traction on the foreskin to try to push the phimotic ring distal to the coronal sulcus

849. a) Hypothyroidism in associated with elevated levels of thyroid-releasing hormone that also stimulates release of prolactin.

850. b) Papilloma causes watery discharge.

851. a) Mastitis causes purulent discharge.

852. d) Galactorrhea causes milky discharge.

853. c) Duct ectasia causes bloody discharge. It also produces multicolored/sticky or serous/serosanguineous discharge.

854. d) Galactorrhea

855. c) Congenital hypopituitarism also manifests with severe hypoglycemia, prolonged neonatal jaundice, and in boys, with microphallus.

856. c) Congenital hypopituitarism; this is a characteristic manifestation. **Silver-Russel syndrome** is characterized by small triangular facies, frontal bossing, sparse subcutaneous tissue, shortened and incurved 5th fingers, low birthweight for gestational age, short stature, and may appear with hemihypertrophy.

857. e) Chromosome 17q

858. e) Peak levels of GH are less than 10 μg/L after two provocative tests (i.e., administration of L-dopa, insulin, glucagon, arginine, or clonidine). Answers (a), (b), (c) and (d) are also noted in patients with GH deficiency.

859. d) **Pseudohyponatremia** manifests with normal intravascular volume and normal urine sodium same as **factitious hyponatremia**.

860. c) **SIADH** manifests with high intravenous volume and high urine sodium.

861. b) **Cerebral salt wasting** manifests with low intravascular volume and very high urine sodium.

862. a) **Systemic dehydration** manifests with low intravascular volume and low urine sodium same as **primary salt loss and decreased effective plasma volume**.

Patients with **primary polydipsia** manifest with normal or high intravascular volume and normal urine sodium.

Patients with **decreased free water clearance** manifest with normal or high intravascular volume and urine sodium.

863. c) The most common cause of Addison disease is autoimmune destruction of the glands. Answers (a) and (d) are less likely cause of Addison disease. Answers (b) and (d) can cause Addison disease.

864. b) Meningococcemia causes adrenal crisis that is called Waterhouse-Friderichsen syndrome.

865. e) Adrenal insufficiency in infants causes hypoglycemia, hyponatremia, and hyperkalemia. Hyperpigmentation takes weeks or months to develop. Ketosis is an inconsistent finding because infants produce ketones less effectively than older children. The infant has adrenal hemorrhage due to a forcep delivery resulting in adrenal insufficiency.

866. c) Hyperkalemia usually occurs later in the course of the disease in older children than in infants. Older children usually manifest with muscle weakness, vomiting, weight loss, and hypotension. Hyperpigmentation may or may not be present.

867. e) Primary adrenal insufficiency is diagnosed by decreased serum levels of cortisol before and after (30 to 60 minutes) the administration of ACTH. Answers (d) represents **secondary** adrenal insufficiency. Answers (a), (b), and (c) are also noted in patients with adrenal insufficiency. They also have increased renin and eosinophils in the blood. They also have increased excretion of sodium and chloride and decreased excretion of potassium in the urine.

868. c) Fludrocortisone (Florinef) is used for choronic replacement therapy if aldosterone deficiency is present. Measurements of plasma renin activity are useful in monitoring the adequacy of mineralocorticoid therapy (i.e., renin activity level should not be elevated after an adequate therapy).

869. d) Obesity, short stature, hyperglycemia, and osteoporosis are features of **chronic overdose of glucocorticoids**.

870. a) Primary hypogonadism (hypergonadotropic hypogonadism in the male) have both small testes and penis at birth. Secondary hypogonadism (hypogonadotropic hypogonadism in the male) have **normal testes at birth** and remain in the prepubertal state because lack of stimulation by gonadotropins.

871. d) The boy has primary hypogonadism. FSH and LH levels are highly elevated in boys after 11 years of age, reaching the castrate range. A random serum testosterone level is not useful in prepubertal boys because it is low. In normal children, serum testosterone levels are elevated significantly after administration of hCG but in children with primary hypogonadism, there is no rise or attenuated rise after administration of hCG.

872. d) Testicular cancer is not present. Answer (e) can produce precocious puberty in young boys due to increased production of hCG (human chorionic gonadotropin).

873. a) Spermatogenic arrest and Sertoli cell predominance. Most patients with Klinefelter syndrome have azoospermia and infertility.

874. d) Testosterone therapy increases prostate volume and prostate-specific antigen levels. Fertility can occur by an intracytoplasmic sperm injection after testicular sperm extraction.

875. e) Usual insulin doses should be reduced as much as 50% or more in prolonged exercise (e.g., long distance running).
876. a) Usual insulin doses should be reduced by 10-15% in regular exercise.
877. a) Parvovirus B19 typically produces **red cell aplasia**, but in patients with sickle cell disease or immunodeficiencies it can produce **transient** pancytopenia.
878. e) von Willebrand disease
879. b) The D-dimer assay is more specific and equally sensitive than the FDP test. Answers (a), (c), (d), (e), and decreased levels of factors (II, V, VIII, and fibrinogen) are also noted in patients with DIC.
880. b) Cryoprecipitate is used in patients with **hypofibrinogenemia**.
881. a) Heparin therapy is **occasionally** effective in patients with DIC associated with purpura fulminans and acute promyelocytic leukemia. Heparin therapy is not effective in answers (b), (c), (d), (e), and patients with incompatible blood transfusion reactions, unless there is vascular thrombosis.
882. e) Gastroesophageal reflux is common in patients with BPD (bronchopulmonary dysplasia). Medical therapies include promotility and antacid medications. If unresponsive, fundoplication with gastrostomy is performed.
883. a) Audiologist is not included in the team. However, speech therapist is a part of the team.
884. b) Telogen effluvium is loss of resting or telogen hairs due to premature conversion of growing or anagen hairs. Hair loss occurs 6 weeks to 3 months after the precipitating cause (e.g., surgery, fever, acute blood loss, blood donation, psychiatric stress; discontinuation of high-dose corticosteroids or oral contraceptives). Telogen bulbs are noted on shed hairs under microscopic examination. Patients need reassurance. Hairs will return to normal within 6 months.
885. d) Large nails are noted in Rubinstein-Taybi syndrome, hemihypertrophy, and paronychia congenita.
886. a) Small or absent nails are noted in nail-patella syndrome, ectodermal dysplasia, fetal hydantoin syndrome, acrodermatitis enteropathica, epidermolysis bullosa, and cartilage hair hypoplasia.
887. b) Yellow nail syndrome is associated with bronchiectasis, recurrent bronchitis, chylothorax, and focal edema of the limbs and face.
888. e) Koilonychia is associated with Plummer-Vinson syndrome, hemochromatosis, and hypochromic anemia. Koilonychia is flattening and concavity of the nail plate.
889. c) Leukonychia (or white opacity of the nail plate) is noted in aresenic poisoning (Mees lines), anemia, Hodgkin disease, tuberculosis, lichen planus, and Darier disease.
890. a) Fusobacterium nucleatum and Borrelia vincenti can produce Vincent gingivitis (acute necrotizing ulcerative gingivitis, trench mouth).
891. e) Pseudomonas aeruginosa infection can cause noma neonatorum that manifests with gangrenous lesions of the lips, mouth, nose, and anal regions.
892. b) AIDS can produce oral hairy leukoplakia but is rare in pediatric patients.
893. d) Black hairy tongue is produced by chronic smoking, tetracycline, bacterial overgrowth, and poor oral hygiene.
894. c) Scrotal (fissured) tongue is associated with vitamin A deficiency, trauma, infection, or malnutrition.
895. a) The child has aphthous stomatitis (canker sores) that is **not** produced by herpes simplex virus. Aphthous stomatitis is also produced by malabsorption (e.g., Crohn disease or celiac disease), decreased serum iron or ferrtin levels, food hypersensitivity, allergic or toxic drug reaction, and luteal phase (decreased progesterone) of menstruation.
896. e) Group A beta-hemolytic Streptococci is the most common organism. S. aureus also causes blistering distal dactylitis.
897. a) Staphylococcus aureus. Sycosis barbae is a recurrent, severe erythematous papules and pustules involving the chin, upper lip, and angle of the jaw.
898. a) Pseudomonas aeruginosa (predominantly serotype O-11)
899. e) Pseudomonas aeruginosa. Ecthyma gangrenosa is a necrotic ulcer cover with a gray-black eschar.
900. e) Corynebacterium minutissimum. Erythrasma is a benign, chronic, mildly pruritic superficial skin infections of the toe webs, groin, and axilla. Methylene blue or Gram stain reveals the filamentous coccobacillary forms. This condition is treated with topical erythromycin, clindamycin, miconazole or Whitfield ointment. Recurrence can be prevented by frequent use of antibacterial soap or 10-20% aluminum chloride in anhydrous ethyl alcohol.
901. c) Staphylococcus epidermidis is a coagulase-negative staphylococcus.
902. b) 60-70 mL/kg/day
903. c) 100-120 mL/kg/day
904. b) 15 g/kg/day

905. d) 34 wk gestational age. Premature infants less than 34 wk gestational age should receive gavage feeding or parenteral nutrition.

906. a) Vitamin A. Very low birthweight (VLBW) infants weigh 1,500 g or less at birth. Low birthweight (LBW) infants weight 2,500 g or less at birth.

907. a) Breast milk reduces risk of childhood/adolescent obesity.

908. e) All infants with a birthweight between 1500 and 2000 g with an unstable clinical course requiring oxygen and infants with a birthweight under 1500 g with or without unstable clinical course should have an eye examination to screen for ROP.

909. c) Mixed apnea; obstructive apnea usually occurs before central apnea.

910. a) Cardiac perforation is absent in patients with umbilical arterial catheterization. However, umbilical arterial catheterization can produce infection, accidental hemorrhage, decreased circulation in lower extremities resulting in gangrene, ischemic or chemical necrosis of abdominal organs.

911. e) Umbilical venous catheterization does **not** produce decreased circulation in lower extremities and gangrene. However, umbilical venous catheterization can produce infection and perforation. Answers (b) and (c) can occur when catheter is in right atrium. Answer (d) develops due to portal vein thrombosis, especially in the presence of omphalitis.

912. d) Topical nitroglycerin applied over the femoral artery or local infusion of tolazoline (Priscoline) within the artery, or **rarely**, warming the opposite leg is useful.

913. e) Persistent pulmonary hypertension is the diagnosis when the chest x-ray appears normal, absence of cardiac malformations, hypoxia is liable and out of proportion to the findings on chest x-ray.

914. e) Presence of air leak in both lungs may be the consequence of meconium aspiration.

915. a) ECMO can cause **systemic hypertension**. ECMO also causes air embolism, strokes, atelactasis, cholestatic jaundice, hemolysis, thrombocytopenia, neutropenia, and infectious complications of blood transfusions.

916. d) Reassurance because oral thrush in an otherwise healthy infant is a self-limited infection. However, treatment is indicated if there is associated candidal diaper rash.

917. b) 'Blueberry-muffin' rash is produced by CMV, rubella, and parvovirus. This rash represents dermal erythropoiesis.

918. a) Satellite pustules those affect the contiguous skin are a hallmark of localized candida infection.

919. e) The presence of salmon-pink pustules suggests Listeria monocytogenes infection.

920. c) The presence of vesicular rash suggests herpes simplex virus infection.

921. d) Ecthyma gangrenosum indicates Pseudomonas infection.

922. d) Severe motor disorders are not associated with violent behavior. Other conditions associated with violent behavior are moderately severe language disorders, mood disturbances, and personality disorders. They have increased vulnerability for substance abuse, sexual promiscuity, juvenile delinquency, incarceration, antisocial behavior, and adult criminal behavior.

923. d) 'F' stands for **F**orgot things while using alcohol or drugs. Other 'F' stands for **F**amily or **F**riends tell the adolescent to cut down on alcohol or drugs.

924. e) Group B Streptococci does not cause genital ulcer syndromes. The most common organism is herpes simplex virus type 2 in adolescents with genital ulcer syndromes.

925. a) GYN consultation is indicated immediately if pregnant or if needs ultrasonography. The initial evaluation also includes ESR or C-reactive protein, RPR, urine culture, urine dipstick, and urine beta-hCG (human chorionic gonadotropin). A surgical consultation is indicated in patients with suspected appendicitis or other surgical problems. Ultrasonography is indicated if there is a mass or difficult to perform an examination. Serum beta-hCG is done if urine beta-hCG is negative and suspected ectopic pregnancy.

926. b) Phenobarbital does not produce CVID.

927. d) Pyremethamine does not produce selective IgA deficiency. Answers (a), (b), (c), and (e) produce selective IgA deficiency and CVID.

928. c) Cartilage hair hypoplasia. Patients can develop fatal varicella infections, progressive vaccinia, and vaccine-associated poliomyelitis.

929. d) Chromosome 11

930. e) Thrombocytopenia is **not** initially due to antiplatelet antibodies.

931. d) Aspiration pneumonia occurs due to impairment of swallowing fluids. Answers (a), (b), (c), and (e) are also complications in patients with juvenile dermatomyositis. Progressive bowel infarction can lead to perforation and death.

932. e) Henoch-Schonlein purpura

933. a) Hypersensitivity angiitis is cutaneous vasculitis following exposure to drugs (e.g., sulfonamides). Patients usually appear with fever, myalgias, and arthralgia.

934. a) Erythromelalgia. Treatment includes avoidance of heat exposure and application of cold substance during attacks. Some children may respond to propranolol, carbamazepine, or sodium nitroprusside.
935. b) Streptococcus pneumoniae
936. e) Streptococcus pneumoniae
937. e) Scarlet fever is caused by group A Streptococcus.
938. c) Group A Streptococcus. Answers (a), (b), (d), and (e) also cause pharyngitis.
939. d) Splenic involvement is **not** a part of Streptococcal toxic shock syndrome. Hypotension plus two or more of the choices those are mentioned in answers (a), (b), (c), and (e) suggest Streptococcal toxic shock syndrome.
940. a) Clinical criteria and detection of group A Streptococcus from a normally sterile site.
941. a) Disseminated gonococcal infection **rarely** causes carditis, osteomyelitis, and meningitis. DGI also causes pustular acral skin lesions.
942. b) Cervix (80-90% of cases)
943. b) Urethra (50-60% of cases)
944. d) Factor V (phosphopyridine nucleotide) and factor X (hematin)
945. a) Lymphadenopathy (96% of cases). Answers (b), (c), (d), (e), vomiting, and hepatosplenomegaly are also clinical manifestations of tularemia in children.
946. a) Ulceroglandular (45% of cases). Answers (b), (c), (d), (e), and typhoidal are also clinical syndromes of tularemia.
947. b) Gentamicin or streptomycin
948. e) Serum agglutination test. A single titer of 1:160 or more in a patient with a typical history and physical findings can make the diagnosis. A fourfold increase in titer from two samples collected 2-3 wk apart is also diagnostic.
949. b) All children with active herpes lesions can go to daycare or school activities when the lesions can be covered.
950. c) Limbs
951. b) Eyes and brain
952. d) Malaria illness should be considered regardless of the use of chemoprophylaxis. Plasmodium falciparum infection should be suspected when children appear with clinical manifestations less than 1 month after return from an endemic area.
953. b) 12 months
954. b) 15 months
955. c) 13 months
956. b) 3 months
957. c) 8 months
958. c) 19 months
959. c) 22 months
960. b) 4 months
961. b) 17 months
962. a) 4 months
963. a) 2 cm/month
964. b) 1 cm/month
965. c) 0.5 cm/month
966. d) 0.25 cm/month
967. e) 1 cm/year
968. a) 2 lb
969. b) 1.25 lb
970. c) 1 lb
971. d) 13 oz
972. e) 8 oz
973. c) 9 months of age
974. a) 16-20 hours per day
975. b) 14-15 hours per day (13-14 hours at 6 months of age)

976. c) 12-14 hours per day
977. d) 11-12 hours per day
978. e) 10 hours per day. After 12 years of age, sleeping time 9 hours per day is ideal but actual sleeping time is 7 hours.
979. b) Clonidine can cause sudden death when used with stimulants. Clonidine also causes sedating bradycardia, hypotension, and withdrawal symptoms.
980. a) Desipramine can cause sudden death in doses more than 3.5 mg/kg. Desipramine can cause hypertension, orthostatic hypotension, arrythmias, and prolong PR or QRS intervals.
981. e) Carbamazepine can cause fever, sore throat, and leukopenia.
982. c) Valproic acid can cause hepatic failure usually in the first few months of treatment. Valproic acid can case birth defects in fetus, obesity, depression, and rashes.
983. d) Lamotrigine can cause Stevens-Johnson syndrome. A concurrent use with valproic acid doubles the lamotrigine blood levels.
984. a) Mild mental retardation (IQ 55-70), moderate (IQ 40-55), severe (IQ 20-40), and profound (IQ less than 20)
985. e) Prescrible regular (not PRN) medications for constant pain. Maintaining comfort is a priority.
986. d) Stimulants are used for opioid-induced somnolence.
987. b) Steroids are used for resistant pain.
988. a) Neuroleptics are used for agitation and nausea.
989. c) Sedatives and hypnotics are used for muscle spasms or anxiety.
990. e) Antidepressants and anticonvulsants are used for neuropathic pain.
991. a) Strong medications should not saved for last use.
992. a) Plasma levels of leptin correlate directly with fat mass. Human leptin is produced predominantly in adipose tissue. Leptin acts on hypothalamus. Low plasma levels of leptin and insulin during fasting and weight loss increase secretion of neuropeptide Y (NPY) that increases food intake and decreases energy expenditure.
993. e) Reassurance. Normal serum phosphorus levels are 4.8-8.2 mg/dL between 0-5 days of life.
994. c) Restrict the fluid intake because the child has increased ADH secretion after surgery.
995. a) Isotonic solution should be given immediately through intravenous route because of intravascular volume depletion and third spacing resulting in oliguria.
996. b) Amrinone is a phosphodiesterase inhibitor and slows cyclic AMP breakdown.
997. c) Dobutamine strengthens cardiac contraction, reduces afterload, and weak vasoconstrictor effects.
998. a) Phenylephrine can produce sudden hypertension.
999. d) Norepinephrine produces short-run rise in blood pressure (high systemic vascular resistance).
1000. e) Epinephrine may reduce renal perfusion.
1001. e) Werdnig-Hoffman disease affects spinal cord.
1002. c) Cystic fibrosis causes peripheral airway obstruction.
1003. a) Prune-belly syndrome may have chest wall deformities.
1004. b) Guillain-Barre syndrome involves neuromuscular system.
1005. d) Croup produces central airway obstruction.

1. All of the following statements are true in patients with Asperger disorders **except**:
    a) Severe language impairments
    b) Repetitive behaviors
    c) Qualitative impairment in the development of reciprocal social interactions
    d) Restricted, obsessional, and idiosyncratic interests
    e) High risk for psychiatric disorders

2. The preferred therapy in patients with Asperger disorders is ;
    a) Group social skills training
    b) Individual occupational skills training
    c) Audiologic evaluations and placement of hearing aid
    d) Vision evaluations by ophthalmologist
    e) Phenytoin

3. The frontal sinuses first appear radiologically around:
    a) Birth
    b) 2 years of age
    c) 4 years of age
    d) 6 years of age
    e) 8 years of age

4. The ethmoid sinuses reach their maximum size during:
    a) 0-1 year of age
    b) 1-3 years of age
    c) 4-7 years of age
    d) 7-14 years of age
    e) 14-18 years of age

5. Blood pressure rises steadily beginning at approximately:
    a) 1 month of age
    b) 1 year of age
    c) 2 years of age
    d) 4 years of age
    e) 6 years of age

6. All of the following statements are true about psychosocial problems **except**:
    a) Children should be allowed and encouraged to express their feelings of fear, anger, or dismay.
    b) Parents should tell their children to be a “good girl” or “good boy”.
    c) Anticipatory guidance during periods of stress helps children to achieve more positive outcomes.
    d) Anticipatory guidance during periods of stress help families to achieve more positive outcomes.
    e) Parents should prepare their children in advance for potentially traumatic events.

7. A healthy child appears with a history of encopresis. The important physical examination must include:
    a) Thyroid examination
    b) Vertebral column examination
    c) Abdominal palpation
    d) Rectal examination

e) Hip joint examination

8. The rectal examination in a child with encopresis reveals absence of fectal impaction. The next step in management is:
a) Plain abdominal x-ray
b) Barium enema
c) Upper GI series
d) Abdominal CT scan
e) Abdominal ultrasonography

9. The therapies in patients with encopresis includes all of the following **except**:
a) Long-term use of laxative
b) Short-term use of mineral oil
c) High-fiber diet
d) Postprandial toilet sitting
e) Short-term use of laxative

10. A child develop oxaluria. The most likely diagnosis is:
a) Vitamin A excess
b) Vitamin C excess
c) Vitamin D excess
d) Vitamin K excess
e) Vitamin E excess

11. A full term newborn develops myoclonic seizure after birth. He was born by NSVD with Apgar scores 8 and 9 at 1 and 5 minutes respectively. EEG reveals hypsarrhythmic pattern. The serum electrolytes are Na 133, K 6.0, cl 102, BUN 15, glucose 50, creatinine 0.9, and calcium 8.0. The most likely etiology is:
a) Perinatal asphyxia
b) Hypoglycemia
c) Hypocalcemia
d) Hyponatremia
e) Vitamin $B_6$ dependence seizure

12. The most devastating effect of hypernatremia is:
a) Adrenal hemorrhage
b) Intestinal bleeding
c) Renal failure
d) Cardiac failure
e) Brain hemorrhage

13. The common complication during treatment for hypernatremia is:
a) Coma
b) Seizures
c) Hyponatremia
d) Hypocalcemia
e) Hyperkalemia

14. Hyperkalemia can occur in the following condition:
a) Leukopenia
b) Thrombocytopenia
c) Thrombocytosis
d) Lymphocytosis
e) Eosinophilia

15. A severely malnourished child develops seizure activities during recovery from diarrhea. Seizures may stop with the following therapy:

a) Calcium
b) Magnesium
c) Glucose
d) Sodium
e) Protein

16. The most important measure to prevent pedestrian injuries is:
a) Education of the child in pedestrian safety should be initiated at an early age by parents.
b) Younger children should not cross the street alone.
c) Major streets should not be crossed alone until the child is 10 years of age or older.
d) Legislation and police reinforcement policies.
e) To route the traffic away from schools and residential areas, and to slow the speed of traffic.

17. The most common sites of all fire deaths in the USA are:
a) Schools (kitchen)
b) Private dwellings
c) Subways
d) Parks
e) Shopping malls

18. The most common cause of fire related death is:
a) Flame burns
b) Smoke asphyxiation
c) Pseudomonas infection
d) Candida infection
e) Staphylococcus aureus infection

19. All of the following measures can prevent fire- and burn-related injuries **except:**
a) Nonflammable fabrics
b) Lower the water heater temperature to 129°F
c) Smoke detectors
d) Self- extinguishing cigarettes
e) Easy-to-use cigarette lighters

20. The cause of cerebral edema in patients with diabetic ketoacidosis is:
a) Inositol
b) Glucose
c) Overhydration
d) Dehydration
e) Hypernatremia

21. The preferred study in a stable child with splenic, hepatic, and renal injury is:
a) Ultrasonography
b) Plain abdominal x-ray
c) Abdominal CT without contrast
d) Nuclear scan
e) Abdominal CT scan with intravenous contrast

22. The preferred therapy in a hemodynamically stable child with splenic, hepatic, and renal injuries from blunt trauma is:
a) Laparoscopic surgery
b) Laparotomy
c) Nonoperative therapy
d) Splenectomy
e) Nephrectomy

**Match of the following different physiologic functions regarding calcium and phosphorous metabolisms (23-24):**

23. Calcitriol
24. PTH
    a) Secreted in response to low plasma calcium
    b) Increases intestinal absorption of phosphorous

25. The goal of informed consent is:
    a) To make the chart complete
    b) To satisfy the director service
    c) To protect from immediate lawsuit
    d) To protect from future lawsuit
    e) Full understanding the benefits and risks of the potential course of action

26. A child is admitted in PICU for head trauma. He is on a mechanical ventilator. Parents want to review the child's medical chart. The following statement is appropriate for this situation:
    a) Parents should wait until the child is discharged home.
    b) Parents are not allowed to review the medical chart.
    c) Parents should find a lawyear to request the chart and to review with him.
    d) Parents should review the medical chart with a social worker in absence of physician.
    e) Parents should review the chart together with the treating physician.

27. A child appears with red, macular, papular, and nodular lesions over the face. He was helping his parents to remove snow from the sidewalk. The preferred therapy is:
    a) Nonsteroidal anti-inflammatory agents
    b) Vancomycin
    c) Cefotaxime
    d) Antithrombotic therapy
    e) Vasodilator therapy

28. A child develops retractions and respiratory distress after extubation following a surgical procedure. A physical examination reveals inspiratory stridor and wheezing in both lungs. The next step in management is:
    a) Chest physiotherapy
    b) Selective intubation in right lung
    c) Selective intubation in left lung
    d) Intravenous corticosteroids
    e) Racemic epinephrine aerosols

29. The most serious complications of neuraxial anesthesia are all of the following **except**:
    a) Respiratory depression
    b) Depression
    c) Brainstem analgesia
    d) Seizures
    e) Respiratory muscles paralsis

30. The most common complications of neuraxial analgesia are all of the following **except**:
    a) Mild discomfort
    b) Numbness
    c) Pruritus
    d) Tingling
    e) Infection

31. The most common abnormality of chromosome number is:
    a) Monosomy

b) Trisomy
c) Turner syndrome
d) Klinefelter syndrome
e) Tetrasomy

32. All of the following statements are true about x-linked recessive inheritance **except:**
a) Incidence is much higher in the males than in females.
b) This disorder is less common in females with Turner syndrome.
c) The gene is transferred from an affected man to all his daughters.
d) The gene is never transmitted from father to son.
e) A significant portion of sporadic cases are due to new gene mutations.

33. The mutations of the following long QT syndrome have the highest risk of cardiac events (e.g., syncope, aborted cardiac arrest, sudden death):
a) LQT 1
b) LQT 2
c) LQT 3
d) LQT 4
e) LQT 5

34. The patients with mutations of the following long QT syndrome experience cardiac events during exercise and rarely during rest and sleep:
a) LQT 1
b) LQT 2
c) LQT 3
d) LQT 4
e) LQT 5

35. All of the following points should be discussed with families considering genetic testing for their children **except:**
a) The testing should serve the best interest of the parents.
b) The physician should follow the decision of a competent adolescent, even when the decision disobey parental decision.
c) The testing should be deferred until after age 18 years if the benefits are not apparent until adulthood.
d) The primary justification of testing should be medical benefits.
e) If medical benefits are absent, psychological benefits to children can justify testing.

36. All of the following peroxisomal disorders have elevated very long chain fatty acids (VLCFA) in plasma **except**:
a) Zellweger syndrome
b) Acyl-CoA oxidase deficiency
c) Bifunctional enzyme defect
d) X-linked adrenoleukodystrophy
e) Rhizomelic chondrodysplasia punctata

37. A newborn infant with rhizomelic chondrodysplasia punctata have all of following features **except:**
a) Severe shortening of distal limbs
b) Cataracts
c) Severe mental retardation
d) Ichthyosiform erythroderma
e) Height, weight, and head circumference are less than the 3rd percentile.

**Match all of the different disorders of carbohydrate metabolisms and their enzyme defects (38-42)**

38. Pentosuria

39. McArdle disease
40. Fanconi-Bickel syndrome
41. Tarui disease
42. Cori disease
    a) Amylo, 1, 6 glucosidase
    b) L-xylulose reductase
    c) Myophosphorylase
    d) Phosphofructokinase
    e) Glucose transporter-2

43. All of the following are clinical manifestations of hypoglycemia in children due to activation of autonomic nervous system and release of epinephrine **except**:
a) Headache
b) Anxiety
c) Perspiration
d) Palpitation
e) Pallor

44. All of the following are clinical manifestations of hypoglycemia in children due to cerebral glucopenia **except:**
a) Mental confusion
b) Decreased visual acuity
c) Diplopia
d) Increased concentration
e) Organic personality changes

45. A child is treated with oral diazoxide for hyperinsulinemic hypoglycemia. All of the following findings are complications of diazoxide **except:**
a) Hirsutism
b) Edema
c) Hypouricemia
d) Advanced bone age
e) IgG deficiency

46. A newborn appears with severe hyperinsulinemic hypoglycemia. His mother has no history of diabetes mellitus. All of the following therapies are optimal **except:**
a) Long-acting somatostatin analogue
b) Diazoxide
c) Intravenous 15-20% glucose
d) Subtotal pancreatectomy
e) Total pancreatectomy

47. Breast-feeding is contraindicated when mother is taking following drugs **except:**
a) Iodides
b) Lithium
c) Thiouracil
d) Methimazole
e) Codeine

48. All of the following can cause sedation in breast-fed newborns **except:**
a) Chlorpromazine
b) Antihistamines
c) Haloperidol
d) Methadone
e) Phenytoin

49. A newborn develops scalp abscess due to fetal scalp monitoring. The most likely causative organism is:
a) Staphylococcus aureus
b) Staphylococcus epidermidis
c) Candida albicans
d) Herpes simplex virus
e) Group B Streptococcus

50. Maternal serum alpha-fetoprotein levels are elevated in all of the following conditions **except:**
a) Trisomies
b) Neural tube defects
c) Intestinal atresia

d) Nephrosis
e) Twins

51. Biophysical profile scoring includes all of the following fetal parameters **except**:
a) Breathing movements
b) Gross body movements
c) Tone
d) Reactive fetal heart rate
e) Quantitative amniotic fluid volume

**Match all of the following agents that are used on pregnant women and their effects on newborns (52-56):**

52. Dexamethasone
53. Pyridoxine
54. Oxytocin
55. Captopril
56. Blue cohosh herbal tea
a) Heart failure
b) Seizures
c) Jaundice
d) Periventricular leukomalacia
e) Transient anuric renal failure

**Match all of the following drugs and mechanisms of teratogenic effects (57-59):**

57. Warfarin
58. Phenytoin
59. Propylthiouracil
a) Deficiency of epoxide hydroxylase
b) Prevents carboxylation of gamma- carboxyglutamic acid
c) Interferes with conversion of inorganic to organic iodides

60. Premature delivery due to bacterial infections is most likely due to:
a) Endotoxin
b) Exotoxin
c) Interleukin 6
d) Tumor necrosis factor
e) Antiprostaglandins

61. A short-term metabolic complication of parenteral nutrition includes all of the following **except**:
a) Hyperglycemia
b) Nephrocalcinosis
c) Hyperlipidemia
d) Azotemia
e) Cholestatic jaundice

62. A properly fed premature infant is doing well in NICU (neonatal intensive care unit).All of the following findings are abnormal **except**:
a) Regurgitation
b) Vomiting
c) Occult blood in stools
d) Watery stools
e) Six stools with semisolid consistency daily

**Match all of the following medications and their effects on premature infants (63-67):**

63. Vitamin K analogs
64. Cisapride
65. Amphotericin
66. Reserpine
67. Sodium bicarbonate
    a) Nasal stuffiness
    b) Prolonged Q-Tc intervals
    c) Hypokalemia
    d) Jaundice
    e) Intraventricular hemorrhage

68. The intermediary metabolism of phenylalanine and tyrosine depends, in part, on the following vitamin:
    a) Vitamin A
    b) Vitamin $B_{12}$
    c) Vitamin C
    d) Vitamin D
    e) Vitamin E

69. In infants, decreased fat absorption with increased fecal fat loss may be associated with decreased absorption of all of the following vitamins and minerals **except:**
    a) Calcium
    b) Vitamin C
    c) Vitamin A
    d) Vitamin D
    e) Vitamin E

**Match all of the following nutrients and their effects (70-72):**

70. Folic acid
71. Vitamin E
72. Vitamin K
    a) Deficiency causes intestinal bleeding
    b) Deficiency causes hemolysis
    c) Essential for the formation of DNA and production of new cells

73. A 3-day-old premature infant manifests with sudden onset of apnea, lethargy, hypotonia, and diminished Moro reflex. Sepsis work up is performed. CBC reveals WBC 14,000, hemoglobin 8, hematocrit 24, platelet 150,000 (dropped from 350,000), polymorphonuclear leukocytes 55, bands 2, lymphocytes 43. Packed RBCs (15ml/kg) transfusion is given. Posttransfusion hematocrit is 26. The infant’s blood type 0+, Coombs(-)ve. Mother’s blood type A+. The serum bilirubin level is 7. The infant’s weight is 980 grams. The most likely diagnosis is:
    a) Group B Streptococcus sepsis
    b) ‘ABO’ hemolytic disease
    c) Apnea of prematurity
    d) Pulmonary hemorrhage
    e) Intraventricular hemorrhage

74. All of the following conditions can produce brachial palsy **except**:
    a) Macrosomia
    b) Medial traction is exerted on the head and neck.
    c) Lateral traction is exerted on the head and neck.
    d) Arms are extended over the head in breech presentation.
    e) Excessive traction is placed on the shoulders.

75. The most common site of injury in brachial palsy is:
   a) C1-C2
   b) C2-C3
   c) C3-C4
   d) C4-C5
   e) C5-C6

76. The site of injury in Klumpke paralysis is:
   a) C1, C2, C3
   b) C4, C5, C6
   c) C7, C8, T1
   d) T2, T3, T4
   e) T5, T6, T7

77. The preferred therapy in newborns with congenital syphilis is:
   a) Penicillin
   b) Ampicillin
   c) Tetracycline
   d) Azithromycin
   e) Trimethoprim-sulfamethoxazole

78. Long-term neurologic complications in patients with herpes simplex virus infections are all of the following **except:**
   a) Hydrocephalus
   b) Porencephalic cyst
   c) Blindness
   d) Mental retardation
   e) Spasticity

79. The radiological picture of the following cardiac condition looks like hyaline membrane disease:
   a) VSD
   b) ASD
   c) Tetralogy of Fallot
   d) PDA
   e) Total anomalous pulmonary venous return

80. The radiological picture of the following condition in term infants manifests as severe and lethal respiratory distress syndrome:
   a) Truncus arteriosus
   b) Diaphragmatic hernia
   c) Meconium aspiration syndrome
   d) Pulmonary hypoplasia
   e) Congenital alveolar proteinosis

81. All of the following are possible indications of assisted mechanical ventilation in newborns **except**:
   a) Arterial blood pH is less than 7.20.
   b) Arterial blood $Pco_2$ is 60 mm Hg or higher.
   c) Arterial blood $Po_2$ is 50 mm Hg or less at oxygen concentration 70-100% and CPAP of 8-10 mm Hg.
   d) Persistent apnea
   e) Persistent supraventricular tachycardia

82. A newborn is placed on a mechanical ventilator for hypoxia. All of the following parameters can improve tissue oxygenation **except**:
   a) Increased $Fio_2$
   b) Increased PIP (peak inspiratory pressure)
   c) Increased gas flow

d) Increased inspiratory: expiratory ratio
e) Increased PEEP excessively

83. A 24-hour-old newborn infant appears with a clear, light yellow fluid that is being discharged from the umbilicus. This condition is associated with:
a) Umbilical polyp
b) Umbilical granuloma
c) Umbilical infection
d) Bladder outlet obstruction
e) Ectopic ureter

84. Majority of girls have menarche at:
a) SMR 1
b) SNR 2
c) SMR 3
d) SMR 4
e) SMR 5

85. The most common cause of primary amenorrhea with advanced pubertal development is:
a) Imperforate hymen
b) Gonadal dysgenesis
c) Triple X syndrome
d) True hermaphroditism
e) Testicular feminization syndrome

86. Polycystic ovary syndrome (PCOS) has all of the following features **except**:
a) Menstrual irregularities
b) Hyperinsulinemia
c) Elevated free testosterone level
d) LH:FSH ratio is less than 1
e) Hirsutism

87. The most common infectious disease associated with lymphocytopenia is:
a) AIDS
b) Influenza
c) Tuberculosis
d) Viral hepatitis
e) Typhoid fever

88. The major cat allergen is:
a) Fe1 d 1
b) Fe2 d 2
c) Fe3 d 3
d) Fe4 d 4
e) Fe5 d 5

89. The most important factor contributing to high birthweight (large for gestational age) is:
a) Maternal obesity
b) Paternal obesity
c) Maternal diabetes
d) Excessive food intake during pregnancy
e) Less physical activities during pregnancy

90. The increase in type 2 diabetes among children and adolescents is due to:
a) Obesity
b) Excessive sugar intake

c) Excessive fat intake
d) Maternal diabetes
e) Paternal diabetes

91. The relative risk of developing obesity is higher in the following age group if they have obese parents:
a) 0-1 month
b) 1-3 month
c) 3-6 month
d) Young children
e) Older children

92. The following statement is not true about prevention of obesity:
a) Breast-fed infants are more likely to develop adult obesity than bottle-fed infants.
b) Increased physical activities reduce obesity in all citizens.
c) Changing dietary habits are important measures in prevention of obesity.
d) Pediatricians should counsel obese parents about the risk of childhood obesity in their children.
e) School meal programs should provide healthy choices for children

93. The preferred therapy in patients with malignant hyperthermia after general anesthesia is:
a) Intravenous succinylcholine
b) Intravenous pancuronium
c) Intravenous acetaminophen
d) Intravenous ibuprofen
e) Intravenous dantrolene sodium

94. Preoperative susceptibility testing for malignant hyperthermia includes all of the following studies **except**:
a) Measuring muscle $CO_2$ production in response to administration of intramuscular caffeine.
b) Measuring muscle $O_2$ production in response to administration of intravenous caffeine.
c) Genetic analysis of ryanodine receptor gene.
d) Muscle biopsy
e) In vitro muscle contraction studies

95. The side effects of dantrolene are:
a) Respiratory stimulants and muscle stimulants
b) Respiratory depressants and muscle weakness
c) CNS stimulants and muscle stimulants
d) Hepatic and renal injuries
e) Thyroid and parathyroid glands suppression

96. A premature infant develops apnea after hernia repair. All of the following statements are true about postoperative apnea **except**:
a) Postoperative apnea is always central apnea.
b) Inadequate anesthesia is associated with increased apnea and respiratory complication in neonates.
c) The risk of developing postoperative apnea in premature infants is inversely proportional to postconceptual age at the time of surgery.
d) Thephylline can decrease the incidence of postoperative apnea.
e) Apnea is most common within the first 12 hours after surgery.

97. A 5-day-old male infant appears with feeding, vomiting, and lethargy for the last 24 hours. He was born by NSVD with good Apgar scores. He was mildly jaundiced but did not require phototherapy. A physical examination reveals hypertonicity, muscular rigidity, and opisthotonos. The infant developed convulsion in the ER. The laboratory studies reveal hypoglycemia and metabolic acidosis. The infant has a peculiar odor. Sepsis work up was performed including lumbar tap. The infant received ampicillin and gentamicin. All cultures are negative. Head CT scan reveals cerebral edema that is most prominent in the cerebellum, cerebral peduncle, dorsal brain stem, and internal capsule. The most likely diagnosis is:
a) Group B Streptococcus meningitis

b) Parvovirus B19 infection
c) Child abuse
d) Maple syrup urine disease
e) Subarachnoid hemorrhage

98. The diagnosis of maple syrup urine disease is confirmed by:
a) Peculiar odor of maple syrup is noted in urine, sweat, and cerumen.
b) Decreased plasma levels of leucine, isoleucine, and valine
c) Increased plasma levels of leucine, isoleucine and valine
d) Decreased urine levels of leucine, isoleucine, and valine.
e) Increased plasma levels of maple syrup

99. The preferred therapy in patients with maple syrup urine disease is:
a) Peritoneal dialysis
b) Exchange transfusion
c) Sodium bicarbonate
d) Phenobarbital
e) Liver transplantation

100. A child develops clinical manifestation resembling acrodermatitis enteropathica. The child improved rapidly with the following therapy:
a) Addition of isoleucine to the diet
b) Addition of leucine to the diet
c) Addition of valine to the diet
d) Removal of isoleucine from the diet
e) Removal of leucine from the diet

101. Patients with galactosemia are at increased risk for neonatal sepsis due to the following organism:
a) E. coli
b) Group B Streptococcus
c) Staphylococcus aureus
d) Candida albicans
e) Pseudomonas aeruginosa

102. A newborn appears with jaundice, vomiting, hypoglycemia, convulsion, and lethargy. A physical examination reveals cataracts, vitreous hemorrhage, and hepatosplenomegaly. The most likely enzyme defect is:
a) Galactokinase deficiency
b) Fructokinase deficiency
c) Glycogen synthetase deficiency
d) Phosphorylase kinase deficiency
e) Uridyl transferase deficiency

103. A newborn has galactosemia. Elimination of galactose from diet reverses all of the following conditions **except**:
a) Cataracts
b) Growth failure
c) Hepatic dysfunction
d) Renal dysfunction
e) Learning disabilities

104. The following statement is **not** true about screening for hypercholesterolemia:
a) Children with a parental history of cholesterol levels above 240 mg/dL should have their cholesterol level measured.
b) Cholesterol measurements are not reliable in all laboratories.
c) Children with total cholesterol levels are less than 170 mg/dL should be re-evaluated in 5 years.
d) Children with total cholesterol levels are more then 200 mg/dL should have a fasting lipid profile measured.

e) Children with total cholesterol levels with 170-199 mg/dL should be re-evaluated after 1 year.

105. A newborn develops pneumothorax on the first day of life. All of the following conditions can produce pneumothorax **except**:
a) Renal malformations
b) Pulmonary hypoplasia
c) Meconium aspiration
d) Perinatal asphyxia
e) Spontaneous

106. A newborn develops respiratory distress at birth. A physical examination reveals the posterior displacement of the tongue and hypoplasia of the mandible. The most likely diagnosis is:
a) Turner syndrome
b) Down syndrome
c) Trisomy 18
d) Trisomy 13
e) Pierre Robin syndrome

107. A newborn develops respiratory distress at birth when the mouth is closed. The most likely diagnosis is:
a) Choanal stenosis
b) Pierre Robin syndrome
c) DiGeorge syndrome
d) Deviated nasal septum
e) Choanal atresia

108. A newborn develops difficulty feeding and breathing after birth. A physical examination reveals flattened nose and asymmetric nares. The most likely diagnosis is:
a) Down syndrome
b) Trisomy 13
c) Choanal stenosis
d) Nasolacrimal duct cyst
e) Dislocated cartilaginous portion of the nasal septum

109. The diagnostic criteria in patients with anorexia nervosa include all of the following conditions **except:**
a) In females, absence of at least three consecutive menstrual cycles.
b) Intense fear of becoming obese despite progressive weight loss
c) “Feel fat” even when is emaciated.
d) Failure to make expected weight gain during the period of growth resulting in body weight 15% less than the expected.
e) Decreased physical activities

110. The diagnostic criteria in patients with bulimia include all of the following conditions **except:**
a) A minimum average of two binge eating episodes per week for at least 1 month
b) Rapid intake of large amount of food, usually less than 2 hours.
c) During the eating binges, they are afraid of not being able to stop eating.
d) Self-induced vomiting after binge eating episode
e) Rigorous dieting and fasting after binge eating episode

111. The therapy in patients with amphtetamine overdose may include all of the following drugs/measures **except**:
a) Phenothiazines
b) Haloperidol
c) Lorazepam
d) Cooling blanket
e) Antihypertensive medication

112. The most common lesion of breast in women younger than 22 years of age is:

a) Fibrocystic changes
b) Carcinoma
c) Lipoma
d) Sebaceous cyst
e) Fibroadenoma

113. The following drug of abuse does **not** cause gynecomastia:
a) Methadone
b) Cocaine
c) Heroin
d) Marijuana
e) Amphetamines

**Match all of the following diseases and their impaired functions (114-118):**

114. Chronic granulomatous disease
115. Chediak-Higashi syndrome
116. Leukocyte adhesion deficiency 1
117. Familial Mediterranean fever
118. Hyperimmunoglobulin E syndrome
a) Decreased neutrophil chemotaxis, degranulation, and bactericidal activities
b) Excessive accumulation of neutrophils at inflamed sites
c) Impaired IgG opsonization of S. aureus
d) Decreased binding of C3bi to neutrophils
e) Failure to activate neutrophil respiratory burst resulting in failure to kill catalase-positive microbes

119. All of the following are clinical manifestations in patients with allergic rhinitis **except:**
a) An upward rubbing of the nose with an open palm or extended fingers
b) A continuous open-mouth breathing
c) A horizontal skinfold over the bridge of the nose
d) Dark circles under the eyes
e) Thick, purulent nasal secretions

120. The **triad asthma** includes the following conditions:
a) Asthma, sinusitis with nasal allergy, and acetaminophen sensitivity
b) Asthma, bronchitis, and aspirin sensitivity
c) Asthma, bronchiectasis, and ibuprofen sensitivity
d) Asthma, sinusitis with nasal polyposis, and aspirin sensitivity
e) Asthma, cystic fibrosis, and penicillin allergy

121. The preferred study to measure the airflow in patients with asthma is:
a) Spirometry
b) Chest X-ray
c) Chest CT scan
d) Chest MRI
e) Peak expiratory flow monitoring

122. The following chromosome is associated with atopic dermatitis:
a) Chromosome 1
b) Chromosome 3
c) Chromosome 5
d) Chromosome 7
e) Chromosome 9

123. The following type of juvenile rheumatoid arthritis has poor prognosis:

a) Polyarthritis RF (rheumatoid factor)-seropositive
b) Polyarthritis ANA (antinuclear antibody)-seropositive
c) Oligoarthritis HLA-B27-positive
d) Oligoarthritis seronegative
e) Systemic disease oligoarthritis

124. The following type of juvenile rheumatoid arthritis has an excellent prognosis **except eyes**:
a) Oligoarthritis ANA-seropositive
b) Oligoarthritis RF-seropositive
c) Oligoarthritis HLA-B27-positive
d) Systemic disease polyarthritis
e) Polyarthritis seronegative

**Match the different diseases and specific antigens (125-129):**

125. Mixed connective tissue diseases
126. Scleroderma
127. Sclerodermatomyositis
128. Systemic lupus erythematosus
129. Sjogren syndrome
a) Ro/SSA
b) Sm
c) Ribonucleoprotein
d) Scl
e) Pm-Scl

130. A positive ANA (antinuclear antibodies) titer (1:80 or more) indicates:
a) Increased polymorph activity
b) Increased lymphocyte activity
c) Increased monocyte activity
d) Increased eosinophil activity
e) Increased basophil activity

131. A child has positive ANA titer. The child is asymptomatic. A physical examination reveals unremarkable findings. Her parents are worried. The following statement is true about this patient:
a) About 100%, the child will develop rheumatic disease.
b) About 75%, the child will develop rheumatic disease.
c) About 50%, the child will develop rheumatic disease.
d) About 25%, the child will develop rheumatic disease.
e) Rarely, the child will develop rheumatic disease.

132. Positive ANA tests are found in all of the following conditions **except**:
a) Kawasaki disease
b) Rheumatic disease
c) Crohn disease
d) Graves disease
e) Idiopathic thrombocytopenic purpura

133. The core team for care of children with rheumatic disease includes all of the following specialists **except**:
a) Pediatrician
b) Opthalmologist
c) Orthopedic surgeon
d) Nurse
e) Pediatric rheumatologist

134. All of the following medications can be used in children with rheumatic disease **except**:
   a) NSAIDs
   b) Methotrexate
   c) Hydroxychloroquine
   d) Intravenous immunoglobulin (IVIG)
   e) Intramuscular corticosteroids

**Match all the following medications and their side effects (135-139):**

135. Ibuprofen
136. Naproxen
137. Methotrexate
138. Hydroxychloroquine
139. Sulfasalazine
   a) Stevens-Johnson syndrome
   b) Retinal toxicity
   c) Elevated liver enzymes
   d) Pseudoporphyria
   e) Aseptic meningitis in some patient with SLE

**Match all the following drugs and their potential side effects (140-144):**

140. Cyclophosphamide
141. Intravenous immunoglobulin (IVIG)
142. Hydroxychloroquine
143. Etanercept
144. Intravenous glucocorticoids
   a) Cardiac arrythmias
   b) Cystitis
   c) Myasthenia- like weakness
   d) Aseptic meningitis
   e) Increased systemic infections

145. The serious complication of herpes simplex virus (HSV) gingivostomatitis is:
   a) Group B Streptococcus bacteremia
   b) Group A Streptococcus bacteremia
   c) Candida albicans bactremia
   d) Candida albicans meningitis
   e) E. coli bacteremia

146. The most common case of stomatitis in children 1-3 years of age is:
   a) Group A Streptococcus
   b) Group B Streptococcus
   c) Staphylococcus aureus
   d) Cigarette burn
   e) Herpes simplex virus

147. The lymphadenitis commonly occurs in acute herpetic gingivostomatitis is:
   a) Preauricular
   b) Tonsillar
   c) Submandibular
   d) Submaxillary
   e) Supraclavicular

148. The following statement is **not** true about the varicella vaccine and MMR vaccine:
    a) Both vaccines can be given simultaneously.
    b) Varicella vaccines can be given after 4 weeks of MMR vaccine
    c) Varicella vaccine can be given after 6 weeks of MMR vaccine.
    d) Varicella vaccine can be given within 4 weeks of MMR vaccine
    e) Varicella vaccine can be given after 8 weeks of MMR vaccine.

149. Varicella-zoster immune globulin (VZIG) is recommended in all of the following candidates, provided significant varicella exposure has occurred **except:**
    a) Immunocompromised children without history of varicella or vericella immunization
    b) Newborn infant whose mother had onset of chickenpox within 5 days before delivery or within 2 days after delivery
    c) Newborn infant whose mother had onset of chickenpox beyond 5 days before delivery or beyond 2 days after delivery.
    d) Hospitalized premature infants (28 weeks gestational age or above) whose mothers lack a history of chickenpox or serologic evidence of protection against varicella.
    e) Hospitalized premature infants (less than 28 weeks gestational age or less than 1000 grams), regardless of maternal history of varicella or varicella-zoster virus serostatus.

150. Mother of a newborn infant develops varicella zoster. The following statement is true about the management of newborn:
    a) VZIG should be given immediately.
    b) VZIG should be given within 12 hours.
    c) VZIG should be given within 24 hours.
    d) VZIG should be given within 48 hours.
    e) VZIG should not be given.

151. The most common cause of hemolytic disease of the newborn is:
    a) E. coli sepsis
    b) Rh incompatibility
    c) Biliary atresia
    d) ABO incompatibility
    e) Group B Streptococcus bacteremia

152. The following condition inconsistently predicts the need for an exchange transfusion in hemolytic disease of the newborn due to Rh incompatibility:
    a) Cord hemoglobin of 10g/dL or less/bilirubin of 5 mg/dL or more
    b) Previous kernicterus in a sibling
    c) Previous erythroblastosis fetalis in a sibling
    d) Reticulocyte counts greater than 15%
    e) Prematurity

153. The following conditions is more common in neonates born to women who use heroin than those born to women who stop using heroin:
    a) Large for gestational age
    b) Microcephaly
    c) Hydrocephalus
    d) Cataracts
    e) Prematurity

154. Maternal heroin addiction can produce all of the following conditions in neonates **except:**
    a) Low-birthweight infants
    b) Withdrawal symptoms
    c) Small for gestational age
    d) Increased jaundice
    e) Decreased hyaline membrane disease

155. All of the following conditions can cause hypomagnesemia in newborns **except**
- a) Infant of diabetic mother
- b) Amphotericin B
- c) Neonatal hypoparathyroidism
- d) Hyperphosphatemia
- e) Mother received treatment for preeclampsia

156. A routine newborn physical examination reveals symmetrical SGA (small for gestational age), a thin upper lip, epicanthal folds, short palpebral fissures, micrognathia, maxillary hypoplasia, some restriction of joint movements, limb abnormalities, and VSD (ventricular septal defect). The most likely diagnosis is:
- a) Congenital toxoplasmosis
- b) Congenital rubella
- c) Congenital CMV infection
- d) Fetal alcohol syndrome
- e) Infant of heroin use mother

157. The total calcium usually provides a fair assessment of physiologic ionized calcium. However, this statement is not true in all of the following conditions **except**:
- a) Liver disease
- b) Protein-losing enteropathy
- c) Capillary leak
- d) Nephrotic syndrome
- e) Normal serum pH

**Match different milk and approximate calcium concentration (158-160):**

158. Breast milk
159. Cow’s milk
160. Formula
- a) 300 mg/L
- b) 530 mg/L
- c) 1200 mg/L

**Match different sites and vitamin D formation (161-163):**

161. Skin
162. Liver
163. Kidney
- a) 25-dihydroxyvitamin D is converted into 1, 25-dihydroxyvitamin D by the enzyme 1 alpha-hydroxylase.
- b) Vitamin D is synthesized from 7-dehydrocholesterol .
- c) Vitamin D is hydroxylated to produce 25- hydroxyvitamin D.

164. Urinary calcium excretion is increased by all of the following hormones **except**:
- a) Growth hormone
- b) Thyroid hormone
- c) Parathyroid hormone
- d) Glucagon
- e) Calcitonin

165. The preferred therapy for symptomatic hypocalcemia in neonates is:
- a) Intravenous calcium gluconate (25-50 mg/kg, 10% solution, 2.2-4.5 mg of elemental Ca/kg), the dose may be repeated every 6-8 hours.

- b) Intravenous calcium bicarbonate (100-200 mg/kg, 10% solution, 9-18 mg of elemental Ca/kg), the dose may be repeated every 4-6 hours.
- c) Intravenous calcium bicarbonate (200-400 mg/kg, 10% solution, 18-36 mg of elemental Ca/kg), the dose may be repeated every 2-4 hours.
- d) Intravenous calcium gluconate (100-200 mg/kg, 10% solution, 9-18 mg of elemental Ca/kg), the dose may be repeated every 6-8 hours.
- e) Intravenous calcium carbonate (100-200 mg/kg, 10% solution, 9-18 mg of elemental Ca/kg), the dose may be repeated every 2-4 hours.

166. Late neonatal hypocalcemia is usually associated with hyperphosphatemia. The preferred milk formula to treat this condition is:
   - a) Similac 24 special care formula
   - b) Similac 20 with supplemental calcium
   - c) Isomil with supplemental calcium
   - d) Prosobee without supplemental calcium
   - e) Similac PM 60/40 and oral calcium supplementation

167. Prolonged immobilization due to injuries (e.g., leg fractures, burns, spinal cord paralysis) results in:
   - a) Hypocalcemia
   - b) Hypercalcemia
   - c) Hyperphosphatemia
   - d) Hypomagnesemia
   - e) Hypermagnesemia

**Match the different conditions with abnormal calcium levels (168-171):**

168. Malignancies
169. Jansen metaphyseal chondrodysplasia
170. Infantile form of hypophosphatasia
171. Acute rhabdomyolysis
   - a) Hypercalcemia
   - b) Hypocalcemia

172. The side effect of intravenous calcium therapy is:
   - a) Tachycardia
   - b) Reduces digoxin toxicity
   - c) Hypoparathyroidism
   - d) Myocardial necrosis
   - e) Tissue necrosis

173. Dent disease includes all of the following **except**:
   - a) Hypophosphatemia
   - b) Hypercalciuria
   - c) Chronic renal failure
   - d) Rickets
   - e) Autosomal dominant

174. Hypophosphatemia is produced by all of the following conditions **except**:
   - a) Metabolic acidosis
   - b) Kidney transplantation
   - c) Thiazide
   - d) Hypoaldosteronism
   - e) SIADH

175. Hypophosphatemia after kidney transplantation occurs due to all of the following conditions **except**:

a) Urinary phosphorus losses
b) Glucocorticoid therapy
c) Primary hyperparathyroidism
d) Secondary hyperparathyroidism
e) Upregulation of phosphatonins before transplantation

176. Progeria includes all of the following findings **except**:
a) Abnormal motor development
b) ‘Sculpted nose’
c) Stiffness of joints
d) Alopecia
e) Loss of subcutaneous fat

177. The cause of death in patients with progeria is:
a) Pulmonary disease
b) Cardiac disease
c) CNS disease
d) Hepatic disease
e) GI disease

178. The most common cause of persistent hypoglycemia in early infancy is:
a) Maternal diabetes
b) Sepsis
c) Bacterial meningitis
d) Dehydration
e) Hyperinsulinism

179. The presence of macrosomia at birth in hyperinsulinemic infants is most likely due to:
a) Maternal excessive food intake
b) Maternal gestational diabetes
c) Maternal diabetes mellitus
d) Growth hormone overproduction
e) Anabolic effects of insulin

**Match different causes of childhood hypoglycemia and their clinical manifestations and laboratory findings (180-184):**

180. Adrenal insufficiency
181. Hyperinsulinemia
182. Hypopituitarism
183. Ketotic hypoglycemia
184. Fatty acid oxidation disorder
a) The child has history of recurrent severe hypoglycemia; no hepatomegaly; no urinary ketones or reducing sugars; normal serum uric acid; normal or mildly elevated serum lipids; results of 24-36 hours fasting reveal highly elevated plasma insulin, markedly decreased plasma glucose, markedly decreased plasma ketones, normal alanine, and normal lactate levels.
b) The child has history of severe hypoglycemia with missed meals; no hepatomegaly; presence of ketonuria and reducing sugars; normal serum lipids and uric acid; results of 24-36 hours fasting reveal normal lactate, highly elevated ketones, decreased glucose, insulin, and alanine levels in plasma.
c) The child has history of severe hypoglycemia with missed meals; normal or mildly enlarged liver with abnormal liver function test results; no urinary ketones and reducing sugars; abnormal serum lipids and elevated serum uric acid levels; fasting is contraindicated.
d) The child has history of moderate hypoglycemia with missed meals; no hepatomegaly; presence of ketonuria and reducing sugars; normal serum lipids and uric acid; results of 24-36 hours fasting reveal normal lactate, highly elevated ketones, and decreased glucose, alanine, and insulin levels in plasma.

e) The child has severe hypoglycemia with missed meals; no hepatomegaly; presence of ketonuria and reducing substance; normal serum lipids and uric acid; results of 24-36 hours fasting reveal normal lactate, highly elevated ketones, and decreased glucose, alanine, and insulin levels in plasma.

185. The primary target of parvovirus B19 infection is:
a) Thrombocytes precursors
b) Lymphocytes
c) Monocytes
d) Neutrophils
e) Erythroid precursors

186. The most common clinical manifestation of parvovirus B19 infection is:
a) Arthropathy
b) Erythema infectiosum
c) Myocarditis
d) Fetal hydrops
e) Transient aplastic crisis

187. The most common clinical manifestation of parvovirus B19 infection in immunocompromised individuals is:
a) Neutropenia
b) Lymphopenia
c) Thrombocytopenia
d) Leukocytosis
e) Chronic anemia

188. The preferred diagnostic study in patients with parvovirus B19 infection is:
a) Viral culture
b) Anti-B19 IgG
c) Anti-B19 IgA
d) Anti-B19 IgE
e) Anti-B19 IgM

189. A 17 -year-old boy develops herpes infection during a wrestling match. The most likely diagnosis is:
a) Herpetic whitlow
b) Herpetic gladiatorum
c) Genital herpes
d) Herpes stomatitis
e) Herpes keratoconjunctivitis

190. A child develops herpes simplex virus infection from minor trauma about the nails. The lesions are extremely painful, vesicles, and deep-seated. The most likely diagnosis is:
a) Herpetic gingivostomatitis
b) Genital herpes
c) Herpetic whitlow
d) Herpes encephalitis
e) Eczema herpeticum

191. A 12-year-old obese boy has a strong family history of coronary heart disease. His plasma total cholesterol level is 200 mg/dL, HDL cholesterol level is 74 /dL, and triglyceride level is 110 mg/dL. His plasma LDL cholesterol level is:
a) 96 mg/dL
b) 100 mg/dL
c) 104 mg/dL
d) 110 mg/dL
e) 112 mg/dL

192. The preferred therapy for children older than 2 years with average LDL cholesterol level more than 110 mg/dL is:
a) Statins
b) Nicotinic acid
c) Bile acid-binding resins
d) Dietary modification
e) Reassurance

193. A dietary intervention in children with hyperlipidemia usually reveals the following result:
a) Lowers LDL cholesterol levels by more than 50%
b) Lowers LDL cholesterol levels by more than 40%
c) Lowers LDL cholesterol levels by more than 30%
d) Lowers LDL cholesterol levels by more than 20%
e) Lowers LDL cholesterol levels by no more than 10-15%

194. The dietary management of hyperlipidemia in children is safe in the following ages **except***:*
a) 5 months
b) 2 ½ years
c) 3 years
d) 3 ½ years
e) 4 years

195. All of the following are risk factors in patients with hyperlipidemia **except**:
a) Diabetes
b) Hypertension
c) Smoking
d) Physical inactivity
e) Mild obesity

196. The first-line pediatric medicine for the therapy of hypercholesterolemia in children is:
a) Statins
b) Bile acid-binding resin
c) Nicotinic acid
d) Fibrates
e) Absolute removal of fat from diet

197. All of the following drugs raise triglyceride levels **except**:
a) Oral contraceptives
b) 13-cis-retinoic acid
c) Thiazide diuretics
d) HIV protease inhibitors
e) Phenytoin

198. All of the following conditions are associated with hyperlipidemia **except:**
a) Hyperthyroidism
b) Diabetes mellitus
c) Nephrotic syndrome
d) Anorexia nervosa
e) Congenital biliary atresia

199. The following statement is not true about the drug treatment in children with hyperlipidemia aged 10 years and older, after an adequate trial (6-12 months) of diet therapy:
a) General pediatrician should be able to treat children who need drug therapy.
b) Drug therapy is indicated when LDL cholesterol level is greater than 190 mg/dL
c) Drug therapy is indicated when LDL cholesterol level is greater than 160 mg/dL and family history of premature coronary heart disease.

d) Drug therapy is indicated when LDL cholesterol level is greater than 160 mg/dL in children with diabetes and hypertension.
e) Drug therapy is indicated when LDL cholesterol level is greater than 160 mg/dL in children with severe obesity and low HDL cholesterol level.

200. The following statement is true about menarche and puberty:
a) Menarche usually occurs about 2.3 years before the initiation of puberty.
b) Menarche usually occurs about 1.3 years before the initiation of puberty.
c) Menarche usually occurs 6 months before the initiation of puberty.
d) Menarche usually occurs about 1.3 years after the initiation of puberty.
e) Menarche usually occurs about 2.3 years after the initiation of puberty

201. The most common cause of an abdominal mass in newborn is:
a) Horseshoe kidney
b) Ectopic kidney
c) Polycystic kidney
d) Pyloric stenosis
e) Multicystic dysplastic kidney

202. The most common renal anomaly in patients with Turner syndrome:
a) Ectopic kidney
b) Polycystic kidney (autosomal recessive)
c) Polycystic kidney (autosomal dominant)
d) Multicystic dysplastic kidney
e) Horseshoe kidney

203. The following tumor is more common in patient with horseshoe kidneys than in the general population:
a) Retinoblastoma
b) Osteosarcoma
c) Wilms tumor
d) Renal cell carcinoma
e) Congenital mesoblastic nephroma

204. A renal sonogram is indicated in newborns with all of the following physical findings **except**:
a) Scoliosis
b) Imperforate anus
c) Single umbilical artery
d) External ear anomalies, especially with multiple congenital anomalies
e) Developmental dysplasia of hip

205. The most urinary tract infections (UTIs) occur due to:
a) Bacterial spread from blood
b) Descending infections
c) Ascending infections
d) Bacterial spread through lymphatics
e) Bacterial spread from perinephric tissues

206. The preferred prophylactic therapy in patients with vesicoureteral reflux is:
a) Ampicillin
b) Amoxicillin
c) Trimethoprim-sulfamethoxazole
d) Gentamicin
e) Cefotaxime

207. The mean age when vesicoureteral reflux resolves is:
a) 2-3 years

b) 3-4 years
c) 4-5 years
d) 5-6 years
e) 6-7 years

208. The most common cause of death in children with prune-belly syndrome in the first few months of life is:
a) Renal failure
b) Pulmonary complications
c) Cardiac failure
d) Hepatic complications
e) Meningitis secondary to E. coli

209. Prune-belly syndrome is often associated with the following intestinal anomaly:
a) Pyloric stenosis
b) Duodenal atresia
c) Jejunal atresia
d) Malrotation
e) Hirschsprung disease

210. The most common cause of urethral strictures in males is:
a) Urethral infection
b) Congenital
c) Urethral trauma
d) Urethral tumor
e) Urethral granuloma

211. The most severe form of obstructive uropathy in boys is:
a) Urethral hypoplasia
b) Urethral strictures
c) Urethral atresia
d) Posterior urethral valve
e) Urethral diverticulum

212. The most common cause of severe obstructive uropathy in children is:
a) Posterior urethral valve
b) Urethral hypoplasia
c) Urethral strictures
d) Urethral atresia
e) Prune-belly syndrome

213. All of the following urinary tract abnormalities are common in patients with prune-belly syndrome (triad syndrome or Eagle-Barett syndrome) **except**:
a) Massive dilatation of the ureters and upper tracts
b) Large urinary bladder
c) Vesicoureteral reflux
d) Hypoplastic prostate
e) Narrowed prostatic urethra

214. A genotypic male infant appears with prenatal and postnatal growth retardation, and mental retardation. A physical examination reveals microcephaly, ptosis, anteverted nares, broad alveolar ridges, syndactyle of the 2nd-3rd toes, and ambiguous genitalia. The most likely diagnosis is:
a) Noonan syndrome
b) Klinefelter syndrome
c) Down syndrome
d) Prader-willi syndrome
e) Smith-Lemli-Opitz syndrome

215. The mode of inheritance of Smith-Lemli-Opitz syndrome is:
  a) Autosomal recessive
  b) Autosomal dominant
  c) X-linked recessive
  d) X-linked dominant
  e) Multifactorial

216. The common associated anomaly in patients with Smith-Lemli-Opitz type I is:
  a) Pyloric stenosis
  b) Hirschsprung disease
  c) Cleft palate
  d) Lipoma of pituitary gland
  e) Skeletal abnormalities

217. The common associated anomaly in patients with Smith-Lemli-Opitz syndrome type II:
  a) Hirschspring disease
  b) Cleft lip
  c) Duodenal stenosis
  d) Jejunal atresia
  e) Imperforate anus

218. Patients with Reifenstein syndrome have all of the following features **except**:
  a) Hypogonadism
  b) Severe hypospadias
  c) Gynecomastia
  d) Abnormalities in the androgen receptor gene
  e) Abnormal receptor gene is located in Y chromosome.

219. The patients with complete androgen insensitivity syndrome (AIS) have all of the following features **except**:
  a) External genitals are female.
  b) Vagina ends blindly in a pouch.
  c) Uterus is absent.
  d) At puberty, they have normal breasts development.
  e) The testes are usually extra-abdominal.

220. Laboratory findings in patients with complete androgen insensitivity syndrome include all of the following **except**:
  a) Adult patients have normal male levels of testosterone.
  b) Adult patients have normal male levels of dehydrotestosterone.
  c) Normal fetal testicular production of AMH (Anti-Mullerian hormone)
  d) Defective response of androgens during fetal life
  e) Resistance to the action of endogenous or exogenous testosterone at the pituitary level.

221. The therapy in patients with androgen insensitivity syndrome (AIS) includes all of the following **except:**
  a) Supplemental androgens are useful in patients with partial AIS.
  b) Genetic counseling should be performed.
  c) Psychosexual therapy is important.
  d) Surgical therapy is important.
  e) Testes should be removed after puberty in patients with complete AIS whose sexual orientation is absolutely female.

222. The most common tumor in patients with complete androgen insensitivity syndrome (AIS) who have intra-abdominal testes is:
  a) Testicular teratoma
  b) Gonadoblastoma

c) Testicular choriocarcinoma
d) Endodermal sinus tumor
e) Testicular seminoma

223. A child has diabetic ketoacidosis. He has Kussmaul breathing. He is arousable, oriented, but sleepy. His venous pH is 7.20. His venous CO2 is 12mEq/L. The most likely diagnosis is:
a) Normal child
b) Mild diabetic ketoacidosis
c) Moderate diabetic ketoacidosis
d) Severe diabetic ketoacidosis
e) Head injury

224. A child has diabetic ketoacidosis. He has depressed respirations and depressed sensorium. His venous pH is 7.10. His venous $CO_2$ is 8 mEq/L. His corrected sodium is 155 mEq/L. The most likely diagnosis is:
a) Severe diabetic ketoacidosis
b) Normal child
c) Diabetes insipidus
d) Hypernatremic dehydration
e) Mild diabetic ketoacidosis

225. The following drug can produce nonketotic hyperosmolar coma:
a) Beta-adrenergic blocker
b) Insulin
c) Glucagon
d) Phenytoin
e) Diazepam

226. The low production of ketones in patients with nonketotic hyperosmolar coma is mainly due to:
a) Kussmaul breathing
b) Hyperosmolarity
c) Depressed sensorium
d) Severe dehydration
e) Severe hyperglycemia

227. In children with nonketotic hyperosmolar coma, there is a high incidence of pre-existing damage to the following organ:
a) Pancreas
b) Liver
c) Intestine
d) CNS
e) Kidneys

228. All of the following features are present in patients with nonketotic hyperosmolar coma **except**:
a) Severe hyperglycemia
b) Severe dehydration
c) Depressed sensorium
d) Kussmaul breathing
e) Focal seizures

229. The treatment of nonketotic hyperosmolar coma includes all of the following **except:**
a) Intravenous regular insulin dose (0.1 U/kg/hour) should be given.
b) Rapid repletion of the vascular volume deficit and very slow correction of hyperosmolar state are indicated.
c) One-half isotonic salin (0.45% NaCI) is given to replace 50% of the volume deficit in the first 12 hours and the remainder is given during the next 24 hours.

d) When the blood glucose concentration reaches 300 mg/dL, 5% dextrose in 0.2 normal saline should be given.
e) About 20 mEq/L of potassium chloride should be added to the fluid.

**Match the different daily blood glucose levels in patients with diabetes mellitus and the adjustment of insulin doses (230-233):**

230. Elevated fasting blood glucose levels
231. Elevated noon blood glucose levels
232. Elevated presupper blood glucose levels
233. Elevated prebedtime blood glucose levels
a) Presupper dose of fast-acting insulin is increased by 10-15%.
b) Evening dose of long-acting insulin is increased by 10-15%.
c) Noon dose of fast-acting insulin is increased by 10-15%.
d) Morning dose of fast-acting insulin is increased by 10-15%.

**Match the different daily blood glucose levels in patients with diabetes mellitus and the adjustment of insulin doses (234-237):**

234. Decreased fasting blood glucose levels
235. Decreased noon blood glucose levels
236. Decreased presupper blood glucose levels
237. Decreased prebedtime blood glucose levels
a) Presupper dose of fast-acting insulin is decreased by 10-15%.
b) Morning dose of fast-acting insulin is decreased by 10-15%.
c) Evening dose of long-acting insulin is decreased by 10-15%.
d) Noon dose of fast-acting insulin is decreased by 10-15%.

238. The caloric distribution in patients with diabetes mellitus should be approximately:
a) 50% carbohydrate, 35% fat, and 15% protein
b) 55% carbohydrate, 30% fat, and 15% protein
c) 35% carbohydrate, 35% fat, and 30% protein
d) 55% carbohydrates, 20%fat, and 25% protein
e) 34% carbohydrates, 33%fat, and 33%protein

239. The mainstay in the nutrition education and management of patients with diabetes mellitus is:
a) Protein counting
b) Fat counting
c) Carbohydrate counting
d) Water intake
e) Fiber counting

240. A high-protein diet in patients with diabetes mellitus may result in:
a) Increased strength
b) Diabetic enteropathy
c) Diabetic nephropathy
d) Diabetic neuropathy
e) Increased muscle mass

241. All of the following statements are true about nutritional managements in patients with diabetes mellitus **except**:
a) Sorbitol and xylitol can be used as artificial sweetners.
b) The ratio of polyunsaturated and saturated fats is about 1.2:1.0.
c) Diets with high fiber content are useful in improving control of blood sugar.

d) Carbonated beverages should be sugar-free.
e) Less than 10% of calories should be derived from saturated fats, up to 10% from polyunsaturated fats, and the remaining calories from monosaturated fats.

**Match the following different conditions with clinical and laboratory findings (242-244):**

242. The Somogyi phenomenon
243. The dawn phenomenon
244. The brittle diabetes
    a) An adolescent female who experienced wide fluctuations in blood glucose levels, often with recurrent diabetic ketoacidosis and she is on large dose of insulin.
    b) The child experienced high morning glucose levels that are rebound from late night or early morning hypoglycemia. This is due to an exaggerated counterregulatory response.
    c) The child experienced high blood glucose levels in the early morning hours before breakfast. The child is on NPH or lente insulin at supper or bedtime. This is due to overnight growth hormone secretion and increased insulin clearance. It is a normal physiologic process seen in most nondiabetic adolescents.

245. A child appears with lower eyelid ecchymosis and nosebleed secondary to trauma. A physical examination reveals limitation of upward gaze, orbital emphysema, and hypesthesia of the ipsilateral check and upper lip. The most likely diagnosis is:
    a) Fracture of the nose
    b) Subdural hemorrhage
    c) Epidural hemorrhage
    d) Penetrating wounds of the orbit
    e) Fracture of the orbital floor

246. The preferred diagnostic study in patients with an orbital fracture is:
    a) MRI
    b) Bone scan
    c) Lateral X-ray of the orbit
    d) Eye examination under anesthesia
    e) The Waters view radiography

247. The treatment for children with orbital fracture may include all of the following measures **except**:
    a) Ice packs
    b) Nasal decongestants
    c) Antibiotic prophylaxis
    d) Surgical repair
    e) Local injection of corticosteroids

248. HDR syndrome includes all of the following findings **except**:
    a) Hypoparathyroidism
    b) Renal anomaly
    c) Conductive deafness
    d) Mutations of the GATA 3 gene
    e) The gene is located at chromosome 10p.

249. A child developed a complication secondary to surgical hypoparathyroidism. The following complication may be the first clinical manifestation in this patient:
    a) Cataracts
    b) Renal stones
    c) Carotid artery aneurysm
    d) Gallbladder stones
    e) Superior vena cava thrombosis

250. All of the following laboratory findings are suggestive of hypoparathyroidism **except**:
    a) Low serum calcium level
    b) Elevated serum phosphorus level
    c) Low serum magnesium level
    d) Low serum PTH (parathyroid hormone) level
    e) The blood level of ionized calcium is always low.

251. The preferred emergency treatment in neonates with tetany secondary to hypoparathyroidism is:
    a) Oral calcium gluconate
    b) Oral calcium glubionate (Neo-Calgucon)
    c) Oral vitamin $D_2$
    d) Intravenous injection of 5-10 mL of a 10 % solution of calcium gluconate at a rate of 0.5-1 mL/min
    e) Intravenous injection of 1-2 mL of a 10% solution of calcium gluconate at a rate of 0.5-1 mL/min

252. A child appears with tetany. A physical examination reveals a short and stocky build; round face, brachydactyly with dimpling of the dorsum of the hand, index finger is longer than the middle finger, lenticular cataracts, and mental retardation. Head MRI reveals calcification of the basal ganglia. The most likely diagnosis is:
    a) Hypoparathyroidism
    b) Pseudohypoparathyroidism
    c) Herpes encephalitis
    d) Congenital rubella
    e) Hyperparathyroidism

253. The definitive diagnosis in patients with type 1A pseudohypoparathyroidism is made by the following finding:
    a) Low serum calcium levels and elevated serum phosphorus and alkaline phosphatase levels
    b) Head MRI reveals a calcification in the basal ganglia
    c) Low serum calcium and phosphorus levels, and elevated serum alkaline phosphatase levels
    d) Normal serum calcium and phosphorns levels, and slightly elevated PTH levels
    e) Demonstration of the mutated G protein

254. All of the following findings are true in patients with pseudopseudohypoparathyroidism **except**:
    a) Reduced alpha subunit of the stimulatory guanine nucleotide-binding protein (Gs) activity
    b) They may have usual anatomical findings of pseudohypoparathyroidism.
    c) Transition from normocalcemia to hypocalcemia often occurs with increasing age of the patient
    d) Mutated G protein is maternally transmitted.
    e) Mutated G protein is paternally transmitted.

255. The ideal interspace for lumbar puncture is:
    a) $T_{12}$ - $L_1$
    b) $L_1$ - $L_2$
    c) $L_2$ - $L_3$
    d) $L_3$ - $L_4$
    e) $L_5$ - $S_1$

256. The range of opening pressure in CSF in normal patients with a flexed lateral decubitus position is:
    a) 0-30 mm of fluid
    b) 30-60 mm of fluid
    c) 60-180 mm of fluid
    d) 180-220 mm of fluid
    e) 220-250 mm of fluid

257. CSF lymphocytosis is noted in all of the following conditions **except**:
    a) Aseptic meningitis
    b) Tuberculous meningitis
    c) Fungal meningitis
    d) Spinal cord tumor

e) Bacterial meningitis

258. Neural tube defects occur due to failure of the neural tube to close spontaneously between the:
a) 2nd and 3rd week
b) 3rd and 4th week
c) 4th and 5th week
d) 5th and 6th week
e) 6th and 7th week

259. The most common congenital anomalies of the CNS (central nervous system) is:
a) Neural tube defect
b) Diffuse calcification
c) Periventricular calcification
d) Aqueductal stenosis
e) Brain tumor

260. The most common site of spina bifida occulta is:
a) L1 - L2
b) L2 - L3
c) L3 - L4
d) L4 - L5
e) L5 - S1

261. The most common site of myelomeningocele is:
a) Cervical
b) Thoracic
c) Lumbar
d) Sacral
e) Lumbosacral

262. The most common associated anomaly in patients with myelomeningocele is:
a) Renal anomaly
b) Hepatic anomaly
c) Cardiac anomaly
d) Retinoblastoma
e) Hydrocephalus

263. A newborn infant has lumbosacral meningomyelocele. He was born by cesarean section with Apgar scores 9 and 9 at 1 and 5 minutes respectively. A physical examination reveals a mass (5 cm in diameter) without CSF leak. The treatment includes all of the following **except**:
a) Surgery should be performed without delay.
b) A careful evaluation and assessment of the genitourinary system is indicated
c) A multidisciplinary team approach should be done.
d) One individual should act as an advocate and coordinate the treatment program.
e) The parents must be given the facts about the baby's condition.

264. Infants with cranial encephalocele are at increased risk for developing all of the following conditions **except**:
a) Hydrocephalus
b) Microcephaly
c) Seizures
d) Visual problems
e) Anencephaly

265. All of the following conditions are true in patients with Meckel-Gruber syndrome **except**:
a) Occipital encephalocele
b) Microcephaly

c) Microopthalmia
d) Polycystic kidneys
e) Autosomal dominant

266. The risk of recurrence in a couple who had one previously affected pregnancy with anencephaly is:
a) 1%
b) 2%
c) 3%
d) 4%
e) 5%

267. The risk of recurrence in a couple who had two previously affected pregnancies with anencephaly is:
a) 4%
b) 6%
c) 8%
d) 10%
e) 25%

268. The most common associated condition in pregnant mothers with an anencephalic fetus is:
a) Oligohydramnios
b) Polyhydramnios
c) Preeclampsia
d) Thrombocytopenia
e) Herpes simplex virus infection

269. The most common cause of congenital viral sensorineural hearing loss is:
a) CMV
b) Mumps
c) Rubella
d) Rubeola
e) Parvovirus B19

**Match the different clinical conditions with the most common type of hearing loss (270-274):**

270. Osteogenesis imperfecta
271. Osteopetrosis
272. Osteosclerosis
273. Labyrinthitis
274. Congenital toxoplasmosis
a) Sensorineural hearing loss
b) Conductive hearing loss

275. A child appears with a sudden onset of vertigo after physical exertion. He also develops sensorineural hearing loss. The most likely diagnosis is:
a) Temporal bone fracture
b) Hematoma of middle ear
c) Perforated tympanic membrane
d) Acoustic trauma
e) Perilymphatic fistula

276. All of the following statements are true about management of patients with perilymphatic fistula **except**:
a) Immediate surgical repair is not indicated.
b) The fistula may close spontaneously.
c) Surgery does not usually restore the sensorineural hearing loss.
d) No reliable test is available to diagnose this condition.

e) Middle-ear exploration is needed for diagnosis and treatment.

277. All of the following findings are noted in patients with longitudinal temporal bone fracture **except**:
a) Absence of battle sign (postauricular ecchymosis)
b) Hemotympanum (blood behind the tympanic membrane)
c) Conductive hearing loss
d) Temporary CSF otorrhea or rhinorrhea
e) Delayed onset of facial paralysis

278. All of the following findings are noted in patients with transverse temporal bone fracture **except**:
a) Absence of facial paralysis
b) Severe sensorineural hearing loss
c) Vertigo
d) Nystagmus
e) Tinnitus

279. All of the following statements are true about treatment in patients with Turner syndrome **except:**
a) Recombinant human growth hormone increases height velocity and ultimate stature in all children.
b) Serum levels of IGF-1 should be monitored routinely during growth hormone therapy.
c) Replacement therapy with estrogen is indicated .
d) Estrogen therapy improves verbal and nonverbal memory.
e) Psychosocial support is indicated.

280. The most common organism in patients with folliculitis is:
a) Pseudomonas aeruginosa
b) Staphylococcus aureus
c) Staphylococcus epidermidis
d) Candida albicans
e) Group A Streptococcus

281. The initial therapy in patients with folliculitis is:
a) Doxycycline
b) Erythromycin
c) Cephalosporins
d) Azithromycin
e) Sitz baths and cleansing with povidone-iodine solution

282. The following types of HPV (human papillomavirus) are associated with malignant and premalignant lesions of the vulva:
a) Types 1 and 3
b) Types 6 and 11
c) Types 16 and 18
d) Types 20 and 30
e) Types 41 and 50

283. A newborn appears with an abdominal mass, jaundice, and scrotal hematoma. He was delivered by vaginal delivery with a breech presentation. His mother's blood type is A(+)ve. Baby's blood type is O(+)ve, Coombs (-)ve. Complete blood count reveals hemoglobin 8 and hematocrit 24. The most likely diagnosis is:
a) 'ABO' hemolytic anemia
b) G6PD deficiency
c) Malaria
d) E. coli sepsis
e) Hemorrhage into adrenal glands

284. All of the following laboratory findings are suggestive of primary adrenal insufficiency **except**:
a) Hyponatremia

b) Hyperkalemia
c) Ketosis
d) Hyperglycemia
e) Elevated serum ACTH levels

285. All of the following statements are true in patients with congenital adrenal hyperplasia due to 21-hydroxylase deficiency **except**:
a) More than 90% of cases of CAH (congenital adrenal hyperplasia) are due to 21-hydroxylase deficiency.
b) Approximately 75% of patients have the salt-losing form and 25% of patients have the simple virilizing form of CAH.
c) More than 90% of mutations causing 21-hydroxylase deficiency are recombinations between CYP21 and CYP21P.
d) Genes are located on chromosome 6p.
e) Male infants have ambiguous genitalia at birth.

286. Oculosympathetic paralysis (Horner syndrome) may be caused by a lesion in all of the following anatomical locations **except**:
a) Midbrain
b) Brainstem
c) Upper spinal cord
d) Neck
e) Posterior fossa

287. The etiology of Horner syndrome includes all of the following conditions **except**:
a) Neuroblastoma in mediastinum
b) Neuroblastoma in cervical region
c) After thoracic surgery
d) Vascular lesions
e) Trisomy 21

288. Congenital Horner syndrome is often a part of the following condition:
a) Cataract
b) Glaucoma
c) Facial nerve palsy
d) Klumpke brachial palsy
e) Retinoblastoma

289. The diagnosis of Horner syndrome can be made by the following investigation:
a) CT scan of the chest
b) MRI of the orbit
c) Electromyography
d) Sweat chloride test
e) Cocaine test

290. The most common cause of a dilated unreactive pupil is:
a) Intracranial aneurysm
b) Transtentorial herniation
c) Pinealoma
d) Opthalmoplegic migraine
e) Instillation of a cycloplegic agent

---

**Match the different osteosarcomas and their characteristics (291-293):**

291. Telangiectatic osteosarcoma
292. Parosteal osteosarcoma

293. Periosteal osteosarcoma
   a) It is a rare variant, tumor arises on the surface of the bone, and has increased rate of metastatic spread.
   b) It is a low-grade, well-differentiated tumor; most commonly found in the posterior aspect of the distal femur; does not invade the medullary cavity; can be cured with surgical resection.
   c) It has a lytic appearance on the plain x-ray and looks like an aneurysmal bone cyst.

294. The preferred therapy in patients with osteosarcoma in the extremity is:
   a) Only chemotherapy
   b) Only surgery
   c) Initial chemotherapy, then surgery
   d) Initial surgery, then chemotherapy
   e) Initial radiotherapy, then surgery

295. The most common benign tumor in infants is:
   a) Lipoma
   b) Fibroma
   c) Hemangioma
   d) Lymphangioma
   e) Teratoma

296. All of the following statements are true about hemangiomas **except**:
   a) More common in females than males
   b) More common in premature infants than term infants
   c) More common in offspring of women who experienced chorionic villus sampling
   d) Hemangiomas can be present at birth, usually arise shortly after birth, grow slowly during the first five years of life, then grow rapidly during the next five years of life, and involute by 10-15 years of age.
   e) Hemangiomas can be present at birth, usually arise shortly after birth, grow rapidly during the first year of life, then grow slowly during the next 5 years of life, and involute by 10-15 years of age.

297. The most common sites of hemangiomas are:
   a) Liver and spleen
   b) Brain and lungs
   c) Head and neck
   d) Chest and abdomen
   e) Upper and lower extremities

298. The following syndrome is associated with kaposiform hemangioendotheliomas or tufted hemangiomas:
   a) Down syndrome
   b) Turner syndrome
   c) William syndrome
   d) DiGeorge syndrome
   e) Kasabach-Merritt syndrome

299. A physical examination of the newborn reveals midline hemangioma in the lumbosacral region. The following investigation indicated in this patient is:
   a) MRI of the brain
   b) CT scan of the spine
   c) Lumbar tap
   d) MRI of the spine
   e) Ultrasonography of hip joints

300. Most patients with hemangiomas require the following treatment:
   a) Laser therapy
   b) Irradiation therapy
   c) Oral prednisone
   d) Interferon-alpha

e) Reassurance

301. The therapy in patients with Kasabach-Merritt syndrome may include all of the following **except**:
a) Oral corticosteroids
b) Interferon-alpha
c) Heparin
d) Aminocaproic acid
e) Embolization

302. The most common clinical manifestation in patients with burn encephalopathy is:
a) Coma
b) Hallucination
c) Seizure
d) Decerebrate posturing
e) Altered states of consciousness

303. Hypertensive encephalopathy is most commonly associated with the following disease:
a) Renal
b) Hepatic
c) Adrenal
d) Pituitary
e) Thyroid

304. The preferred diagnostic study in most neuromuscular disorder is:
a) Nerve biopsy
b) Electromyography
c) Nerve conduction velocity
d) Muscle biopsy
e) Serum creatine kinase

305. The majority of children with aniridia most likely develop the following condition:
a) Wilms tumor
b) Mental retardation
c) Genitourinary anomalies
d) Microcornea
e) Glaucoma

306. The most common associated ocular abnormality noted in patients with aniridia is:
a) Macular hypoplasia
b) Cataract
c) Microcornea
d) Dislocated lens
e) Pannus formation on the cornea

307. Dyslexia is primarily a disorder that involves:
a) Reading
b) Writing
c) Playing instrument
d) Watching television
e) Sleeping

308. Dyslexia is usually diagnosed by the following method:
a) Comparing reading ability with writing ability
b) Comparing writing ability with intelligence
c) Comparing writing ability with visual acuity
d) Comparing writing ability with intelligence and appropriate reading expectations

e) Meticulous opthalmologic examination

309. A 16-year-old boy appears with gross hematuria for the last 6 hours. He denies fever and trauma. He is an athlete. He was engaged in heavy exercise prior to this episode. The color of the urine is bright red and the urine has no blood clots. The most likely finding after investigation is:
a) Presence of E. coli in urine culture
b) Absence of red blood cell casts in urine
c) Presence of large amount of protein in urine
d) Cystoscopy reveals hemorrhagic cystitis
e) Voiding cystourethrography reveals reflux

310. A child appears with hematuria. All of the following findings usually suggest hematuria from lower urinary tract **except**:
a) Presence of dysuria
b) Presence of blood clots
c) Presence of white blood cells casts
d) Absence of red blood cell casts
e) Normal renal sonographic findings

311. The most common hereditary kidney disease is:
a) Autosomal recessive polycystic kidney disease
b) Autosomal dominant polycystic kidney disease
c) Multicytic kidney disease
d) Kidney stones
e) Unilateral hypoplastic kidney

312. The most likely associated cardiac anomaly in children with autosomal dominant polycystic kidney disease is:
a) VSD
b) ASD
c) Tetralogy of Fallot
d) Cardiac tumor
e) Mitral valve prolapse

313. The gene (PKD 1) in patients with polycystic kidney disease is located on the short arm of chromosome:
a) 6
b) 9
c) 12
d) 16
e) 21

314. A newborn appears with the overflow of tears from the right eye onto the lid and cheek. He was born by forcep delivery with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. The conjunctiva appears normal. The preferred therapy is:
a) Topical antibiotic
b) Nasolacrimal massage
c) Systemic antibiotic
d) Probing of the right nasolacrimal duct
e) Repair of the right nasolacrimal duct

315. A 1-year-old infant has left nasolacrimal duct obstruction. The conservative therapy failed to improve the condition. The next step in management is:
a) Topical antibiotic
b) Systemic antibiotic
c) Reassurance
d) Continue nasolacrimal massage
e) Probing of the left nasolacrimal duct

316. The most common organism causing opthalmia neonatorum in USA is:
    a) N. gonorrhoeae
    b) Chlamydia trachomatis
    c) Staphylococcus aureus
    d) Pseudomonas aeruginosa
    e) E. coli

317. The most common organism in patients with hordeolum is:
    a) Staphylococcus aureus
    b) Staphylococcus epidermidis
    c) Pseudomonas aeruginosa
    d) Rhinovirus
    e) N. gonorrhoeae

318. All of the following therapies may be necessary in patients with hordeolum **except**:
    a) Warm compress
    b) Topical antibiotic
    c) Incision and drainage
    d) Laser therapy
    e) Systemic antibiotic

319. The preferred therapy in patients with capillary hemangiomas of the eyelid without visual difficulties is:
    a) Local corticosteroids
    b) Systemic corticosteroids
    c) Interferon
    d) Laser therapy
    e) Observation

320. In patients with Sturge-Weber syndrome, the port-wine stain is localized to the area of the following cranial nerve:
    a) First
    b) Second
    c) Third
    d) Fifth
    e) Seventh

321. The preferred therapy in patients with port-wine stain is:
    a) Covermark
    b) Tattooing
    c) Cryosurgery
    d) Excision
    e) Flashlamp-pumped-pulsed dye laser

322. The most common tumor in infancy is:
    a) Lipoma
    b) Fibroma
    c) Meningioma
    d) Lymphangioma
    e) Hemangioma

323. Vasopressin (antidiuretic hormone) secretion is stimulated by all of the following conditions **except**:
    a) Hyperosmolality
    b) Hypovolemia
    c) Hypotension
    d) Pain

e) Hyperglycemia

324. Extracellular fluid **tonicity** is regulated almost exclusively by the following factors:
a) Sodium intake and excretion
b) Chloride intake and excretion
c) Potassium intake and excretion
d) Water intake and excretion
e) Bicarbonate intake and excretion

325. Extracellular fluid **volume** is regulated by the following factors:
a) Water intake and excretion
b) Calcium intake and excretion
c) Bicarbonate intake and excretion
d) Sodium intake and excretion
e) Chloride intake and excretion

326. The principal regulator of fluid **tonicity** is:
a) Aldosterone
b) Renin
c) Vasopressin
d) Angiotensin
e) Atrial natriuretic peptide

327. Fluid **volume** homeostasis is mainly regulated by the following factor:
a) Vasopressin
b) Atrial natriuretic peptide
c) Growth hormone
d) Oxytocin
e) Renin-angiotensin-aldosterone

328. All of the following statements are true about ANP (atrial natriuretic peptide) **except**:
a) Stimulates sodium resorption
b) Inhibits vasopression secretion
c) Stimulates natriuresis
d) Regulates relaxation of arterial smooth muscles
e) Has an important effects on salt and water balance

329. Atrial natriuretic peptide is released in the following condition:
a) Congestive cardiac failure
b) Hypovolemia
c) Dehydration
d) Hypothermia
e) Hyperglycemia

330. Infants with heart failure often present with hyponatremia. The most likely cause of hyponatremia is:
a) Renal water retention
b) Excessive loss of sodium in kidneys
c) Poor sodium intake by mouth
d) Excessive absorption of potassium in kidneys
e) Decreased ADH (antidiuretic hormone) secretion

331. All of the following are side effects of methylphenidate **except**:
a) Addiction
b) Nervousness
c) Insomnia
d) Anorexia

e) Tics

332. A 15-year-old boy developed severe pain and burning sensation of the (R) upper extremity after the cast is removed. The cast was placed due to the fracture of the right upper extremity. The preferred therapy for pain is:
a) Ibuprofen
b) Acetaminophen
c) Aspirin
d) Morphine
e) Amitriptyline

333. The following investigation is useful prior to amitriptyline therapy:
a) Echocardiogram
b) ECG
c) Renal sonogram
d) Serum creatinine level
e) Liver function tests

334. The side effects of amitriptyline include all of the following **except**:
a) Visual disturbance
b) Dry mouth
c) Constipation
d) Weight gain
e) Hypertension

335. A 14-year-old girl developed side effects of amitriptyline therapy. The medication was discontinued abruptly. The following complication may occur:
a) Weight loss
b) Excessive salivation
c) Hypertension
d) Withdrawal syndrome
e) Diarrhea

336. The most common type of ventriculoperitoneal (VP) shunt infection is:
a) Shunt infection with high-grade fever
b) Shunt infection with nephritis
c) Shunt infection with septic pulmonary emboli
d) Shunt infection with hemiplegia
e) Shunt colonization with symptoms that indicate shunt malfunction

337. A child is pulling his ears. He has no fever and no URI symptoms. The most likely interpretation is:
a) Child has otitis externa
b) Child has otitis media
c) Child has conductive hearing loss
d) Child has sensorineural hearing loss
e) Child does not have ear pathology

338. A child has sensorineural hearing loss. The most likely clinical manifestation is:
a) Otalgia
b) Purulent otorrhea
c) Facial paralysis
d) Vertigo
e) Tinnitus

339. A young child appears clumsy, falls easily, and stumbles frequently. He is otherwise asymptomatic. The most likely cause of these clinical manifestations is:
a) Tinnitus

b) Vertigo
c) Brain tumor
d) Gentamicin toxicity
e) Herpes encephalitis

340. The most common cause of dizziness in young children is:
a) Labyrinthitis
b) Congenital inner ear defect
c) Perilymphatic fistula
d) Meniere disease
e) Eustachian tube-middle-ear disease

341. All of the following conditions cause true vertigo **except**:
a) Vestibular neuronitis
b) Cholesteatoma in the mastoid
c) CNS disease
d) Benign paroxysmal vertigo
e) Facial nerve paralysis

342. Facial nerve paralysis is noted in the following syndrome:
a) Down syndrome
b) Turner syndrome
c) Edward syndrome
d) Klinefelter syndrome
e) Ramsay Hunt syndrome

343. The most common cause of temporary facial nerve paralysis at birth is:
a) Forcep delivery
b) Vacuum assisted delivery
c) Herpes infection
d) Acute otitis media
e) Mobius syndrome

344. Mobius syndrome is usually caused by the following:
a) Symmetric calcified infarcts in the temporal lobes
b) Symmetric calcified infarcts in the parietal lobes
c) Symmetric calcified infarcts in the frontal lobes
d) Symmetric calcified infarcts in the tegmentum of the pons and medulla oblongata during midgestation or late fetal life
e) Asymmetric calcified infarcts in the tegmentum of the pons and medulla oblongata during early fetal life

345. A child appears with severe left ear pain and tenderness. The tenderness is increased by manipulation of left pinna and pressure on the tragus. Physical examination reveals erythema, thick, clumpy otorrhea, and edema of the left ear canal. Tympanic membrane could not be visualized. The cerumen is white and soft in consistency. Left preauricular lymph nodes are palpable and tender. The most likely diagnosis is:
a) Acute otitis media
b) Chronic otitis media
c) External otitis
d) Mastoiditis
e) Mastoid abscess

346. A child appears with external otitis. Physical examination reveals fluffy white debris with some black spores. The child received polymyxin and neosporin topical otic medications. The child did not improve with those medications. The next step in management is:
a) Oral antibiotics
b) Systemic antibiotics

c) Acyclovir
d) Clotrimazole solution
e) Topical erythromycin

347. The preferred therapies for bacterial external otitis are:
a) Topical neosporin with colistin and corticosteroids
b) Topical erythromycin with polymyxin
c) Topical neosporin with erythomycin
d) Topical neosporin without polymyxin and corticosteroids
e) Topical bacitracin without corticosteroids

348. A swimmer had recurrent external otitis. The most effective prophylaxis is:
a) Dilute alcohol
b) Topical neosporin
c) Topical colistin
d) Topical nystatin
e) Topical corticosteroids

349. The most common cause of solitary thyroid nodule in children is:
a) Simple cyst
b) Thyroid abscess
c) Lymphoid follicle
d) Benign neoplasm
e) Malignant neoplasm

350. A child appears with sudden and rapid enlargement of the solitary thyroid adenoma. The most likely cause is:
a) Hemorrhage
b) Malignancy
c) Calcification
d) Secondary infection
e) Rupture

351. A routine physical examination in a child reveals the solitary thyroid nodule and enlargement of cervical lymph nodes. Most likely the child is:
a) Euthyroid
b) Mildly hypothyroid
c) Moderately hypothyroid
d) Mildly hyperthyroid
e) Moderately hyperthyroid

352. A 35-week-gestational age infant with IUGR (intrauterine growth retardation) is admitted to NICU. The infant is extremely irritable, restless, anxious, hyperactive, tachypneic, and tachycardic. Mother denies history of drug use. Mother's thyroid function tests are normal. Maternal history of ruptured amniotic membrane for 18 hours. The infant's CBC is normal and blood culture is negative. Most likely diagnosis is:
a) Bacterial meningitis
b) Herpes encephalitis
c) Subarachnoid hemorrhage
d) Cocaine withdrawal
e) Hyperthyroidism

353. A newborn is diagnosed with congenital hyperthyroidism. The newborn and the mother do not have autoimmune disease. Most likely cause of hyperthyroidism is:
a) Graves disease
b) Mother received propylthiouracil during pregnancy
c) Mother received iodine during pregnancy
d) Mother was exposed to ionizing radiation therapy during pregnancy

e) Mutation of TSH receptor (TSHR) gene

354. A child has recurrence of hyperthyroidism when antithyroid medication was discontinued. The child should be treated with:
a) Synthroid
b) Propylthiouracil
c) Methimazole
d) Propranolol
e) Radioiodine

355. All of the following prenatal findings may indicate fetal hyperthyroidism **except**:
a) Fetal tachycardia
b) Fetal goiter
c) Preterm
d) LGA
e) Very high level of TRSAb (thyrotropin receptor-stimulating antibody)

356. The most common congenital anomaly in IDM (infants of diabetic mothers):
a) Hydronephrosis
b) Renal agensis
c) Neural tube defects
d) Duodenal atresia
e) Lumbosacral agenesis

357. All of the following cardiac anomalies are noted in IDM (infants of diabetic mothers) **except**:
a) VSD
b) ASD
c) Trucncus arteriosus
d) Small heart size
e) Transposition of the great vessels

358. A routine newborn physical examination reveals a systolic murmur (grade 2/6) in the left sternal border. Mother had diabetes during pregnancy. Echocardiogram reveals asymmetric septal hypertrophy. The following medication is contraindicated:
a) Vancomycin
b) Amphotericin
c) Gentamicin
d) Digoxin
e) Acyclovir

359. The main cause of hypoglycemia in IDM (infants of diabetic mothers) is:
a) Hyperinsulinemia
b) Elevated cortisol levels
c) Elevated growth hormone levels
d) Elevated glucagon responses
e) Increased epinephrine responses

360. Hypoglcemia in patients with Beckwith-Wiedemann syndrome is most likely due to:
a) Hypoinsulinemia
b) Elevated growth hormone levels
c) Elevated cortisol levels
d) Hyperinsulinemia
e) Decreased glucagon levels

361. An infant appears with an asymmetric growth in a leg, muscle wasting, and talipes cavus deformity. Plain x-ray of the lumbosacral spine reveals spina bifida. Most likely diagnosis:

a) Transverse myelitis
b) Diastematomyelia
c) Spinal cord tumor
d) Syringomyelia
e) Tethered cord

362. A child appears with diffuse pain in the lower extremities, progressive scoliosis, and abnormalities in urinary bladder function with overflow incontinence. The preferred diagnostic study is:
a) CT scan of the spine
b) MRI of the spinal cord
c) Plain x-ray of the spine
d) MRI of the brain
e) Urinary bladder function study

363. MRI studies in a patient with tethered cord reveal a thickened ropelike filum terminale and anchors the conus at or below the following level:
a) T10
b) T11
c) T12
d) L1
e) L2

364. Preferred therapy in a patient with tethered cord is:
a) Laser therapy
b) Cryosurgery
c) Chemotherapy
d) Radiotherapy
e) Surgical transection

365. Most common organism in brain abscess resulting from penetrating injuries is:
a) Pseudomonas aeruginosa
b) Anaerobic bacteria
c) Staphylococcus aureus
d) Fusobacterium species
e) Streptococcus viridans

366. Most common organism in brain abscess resulting from sinusitis is:
a) Anaerobic bacteria
b) Staphylococcus aureus
c) Actinomyces species
d) Proteus species
e) Streptococcus pneumoniae

367. An abscess in the frontal lobe is usually the extension from the following infection:
a) Otitis media
b) Sinusitis
c) Tooth abscess
d) Peritonsillar abscess
e) Retropharyngeal abscess

368. An abscess in the temporal lobe or cerebellum is usually associated with the following infection:
a) Acute otitis media
b) Chronic otitis media
c) Sinusitis
d) Retopharynegal abscess
e) Peritonsillar abscess

369. A child appears with headache, vomiting, nystagmus, ipsilateral (R) ataxia and dysmetria. She was treated with oral antibiotics for recurrent otitis media and mastoiditis. The following investigation is contraindicated:
a) Lumbar puncture
b) MRI
c) EEG
d) CBC and blood culture
e) Aspiration of the abscess

370. A child appears with severe headache, vomiting, low-grade fever, and seizures. He is receiving oral antibiotics for otitis media. Fever subsided transiently. Physical examination reveals papilledema and right hemiparesis. Preferred diagnostic study is:
a) Head CT scan
b) EEG
c) Brain scan
d) SMA6
e) CSF

**Match different causes of brain abscess and therapies (371-375):**

371. Unknown
372. History of head trauma or neurosurgery
373. Cyanotic cardiac lesion
374. Infected ventriculoperitoneal shunt
375. Otitis media, sinusitis, or mastoidits
a) A combination of third-generation cephalosporin and metronidazole
b) Nafcillin or vancomycin with a third-generation cephalosporin and metronidazole
c) Penicillin and metronidazole
d) Vancomycin and ceftazidime
e) Vancomycin, a third-generation cephalosporin, and metronidazole

376. Preferred therapy for patients with citrobacter meningitis leads to brain abscess is:
a) A combination of third-generation cephalosporin and aminoglycoside
b) Penicillin and vancomycin
c) Ampicillin and gentamicin
d) Gentamicin and metronidazole
e) Nafcillin and gentamicin

377. All of the following are indications for surgery in brain abscess **except**:
a) Gas is present in abscess
b) Multiloculated abscess
c) Posterior fossa abscess
d) Fungal abscess
e) Lesion is 2 cm in diameter

378. Usual duration of antibiotic therapy for brain abscess is:
a) 1-2 weeks
b) 2-4 weeks
c) 4-6 weeks
d) 6-8 weeks
e) 8-10 weeks

379. A child is brought to the ER after a blunt eye injury. Physical examination reveals a bright red fluid between the cornea and iris. The next step in management is:
a) Opthalmology consultation
b) Bed rest

c) Topical mydriatrics
d) Topical corticosteroids
e) Oral aminocaproic acid

380. A child is diagnosed to have traumatic hyphema. Most likely future complication is:
a) Cataract
b) Corneal opacity
c) Glaucoma
d) Retinal detachment
e) Vitreal opacity

381. The chances of rebleeding and acute loss of vision in patients with hyphema are higher if the patient has the following condition:
a) Diabetes mellitus
b) Mental retardation
c) Down syndrome
d) Sickle cell disease
e) Hypertension

382. All of the following statements are true about malabsorptive disorder **except**:
a) Patients usually present with steatorrhea, acidic diarrhea, or watery diarrhea.
b) The absence of diarrhea and the presence of normal stool exclude malabsorptive disorder.
c) Patients usually have foul-smelling bulky stools and abdominal distension.
d) Patients usually have poor weight gain, weight loss, or muscle wasting.
e) Disaccharidase deficiencies are the most common in congenital malabsorptive disorders.

383. The first clinical sign in patients with malabsorption and malnutrition is:
a) Abdominal distension
b) Decreased head circumference
c) Decreased height growth
d) Increased hair loss
e) Decreased weight

384. The most useful screening test for malabsorption is:
a) Microscopic examination of stool for fat
b) Macroscopic examination of stool for food materials
c) Microscopic examination of stool for blood
d) Macroscopic examination of stool for fresh blood
e) Microscopic examination of stool for undigested protein

385. The gold standard for assessing steatorrhea is:
a) A 24-hour quantitative fecal fat test
b) A 48-hour quantitative fecal fat test
c) A 72-hour quantitative fecal fat test
d) A 48-hour qualitative fecal fat test
e) A 72-hour qualitative fecal fat test

386. Calculation of coefficient of fat absorption (i.e., percentage of intake that is absorbed in the system):
a) Fat excretion minus fat intake, divided by fat excretion, and multiplied by 100
b) Fat intake minus fat excretion, divided by fat excretion, and multiplied by 100
c) Fat intake minus fat excretion, divided by fat intake
d) Fat intake minus fat excretion, divided by fat excretion
e) Fat intake minus fat excretion, divided by fat intake, and multiplied by 100

387. A child developed anosmia secondary to trauma. The preferred investigation is:
a) EEG

b) Viral naspharyngeal culture
c) MRI of the brain
d) CT scan of choana
e) Skull x - ray

388. Smell can be tested in preterm babies as early as:
a) 24-week of gestation
b) 26-week of gestation
c) 28-week of gestation
d) 30-week of gestation
e) 32-week of gestation

389. A 2-hour-old baby becomes cyanotic. The infant is transferred to NICU from regular nursery and is placed under oxyhood. The following test can distinguish cardiac from pulmonary disease:
a) Chest x-ray
b) EKG
c) Pulmonary function test
d) Hyperoxia test
e) Chest CT scan

390. The hyperoxia test in a newborn reveals $Pao_2$ is 200 mm Hg. The most likely diagnosis is:
a) Tricuspid atresia
b) Transposition of great vessels
c) Pulmonary disease
d) Truncus arteriosus
e) Total anomalous pulmonary venous return

391. A child appears with joint pain, hepatosplenomegaly, lymphadenopathy, and pericardial effusion. The child experiences quitidian (occuring everyday) fever with temperature spikes at least 39°C. Fever is associated with salmon-colored rash over the trunk and proximal extremities. Most likely diagnosis:
a) Juvenile rheumatoid arthritis
b) Salmonella infection
c) Congestive heart failure
d) Sarcoidosis
e) Listeria infection

392. Koebner phenomenon (i.e., cutaneous herpersensitivity to superficial trauma) is suggestive of the following disease:
a) Meningococcal meningitis
b) Streptococcal cellulitis
c) Darier disease
d) Pityriasis rubra pilaris
e) Juvenile rheumatoid arthitis (systemic-onset disease)

393. An IDM (infant of diabetic mother) patient appears with gross hematuria. Physical examination reveals unilateral flank mass. Most likely diagnosis:
a) Hydronephrosis
b) Polycystic kidney
c) Horseshoe kidney
d) Renal vein thrombosis
e) Multicystic kidney

394. All of the following conditions produce antalgic (painful) gait **except**:
a) Infection
b) Neoplasia
c) Developmental

d) Trauma
e) Rheumatologic disorders

395. All of the following conditions produce Trendelenburg (nonpainful) gait **except**:
a) Cerebral Palsy
b) Poliomyelitis
c) Legg-Calve-Perthes disease
d) Leg-length discrepancy
e) Developmental dysplasia of the hip

396. Most of the adult gait patterns are present in children by:
a) 2 years of age
b) 3 years of age
c) 4 years of age
d) 5 years of age
e) 6 years of age

397. The gait characteristics in children are similar to those of an adult at:
a) 6 years of age
b) 7 years of age
c) 8 years of age
d) 9 years of age
e) 10 years of age

398. All of the following conditions produce out-toeing **except**:
a) Hypermobile pes planus
b) External femoral torsion
c) External tibial torsion
d) Calcaneovalgus feet
e) Talipes equinovarus

399. All of the following conditions produce in-toeing **except**:
a) Internal tibial torsion
b) Internal femoral torsion
c) Metatarsus adductus
d) Calcaneovalgus feet
e) Talipes equinovarus

400. The preferred initial method for the evaluation of the pediatric musculoskeletal system is:
a) Bone scan
b) CT
c) MRI
d) Ultrasonography
e) Plain x-ray (anteroposterior and lateral views)

401. A 15-year-old girl is admitted for MVA (motor vehicle accident). Injury is noted in the pelvic region. A plain x-ray is negative for fracture of pelvic bones. The next step to rule out suspected pelvic bone fracture is:
a) CT scan
b) MRI
c) Bone scan
d) Ultrasonography
e) Repeat plain x - ray

402. In arthrogryposis, involved skeletal muscles are replaced partially or completely by:
a) Fat and fibrous tissue
b) Smooth muscles

c) Bones
d) Tendons
e) Ligaments

403. Some children with arthrogryposis die in infancy due to involvement of the:
a) Cardiac muscles
b) Respiratory muscles
c) CNS
d) Kidneys
e) Liver

404. A fetal ultrasonography reveals dislocation, external rotation, and abduction of both hips, fixed extension of the knees, bilateral severe clubfoot, fixed extension contractions of the elbows, rigid volar flexion and ulnar deviation of the wrists, adduction and internal rotation contracture of the shoulders. Most likely diagnosis is:
a) Amyoplasia
b) Clubfoot
c) Cerebral palsy
d) Cerebral infarction
e) Development dysplasia of hip

405. A newborn has multiple joint contractures. The following consultation is indicated:
a) Cardiac
b) Pulmonary
c) Renal
d) Endocrine
e) Genetic

406. The cause of amyoplasia (or athrogryposis) is:
a) Unknown
b) Muscular
c) Skeletal
d) Vascular
e) Neurologic

407. A 10-year-old child appears with history of trauma in the right extremity. Physical examination reveals pale and cold right hand along with numbness. Most likely diagnosis is:
a) Supracondylar fracture
b) Wrist fracture
c) Anterior dislocation of shoulder
d) Posterior dislocation of shoulder
e) Acromioclavicular separation

**Match the clinical manifestations with different nerve injuries (408-412):**

408. Radiating sharp pain along the back of the thigh
409. Foot drop
410. Unable to stand on the tip of the toe
411. Clawhand deformity
412. Winged scapula
a) Common peroneal nerve or fibular nerve injury
b) Klumpke paralysis (injury at C8 and T1 of brachial plexus)
c) Tibial nerve injury
d) Long thoracic nerve injury (C5, C6, and C7)
e) Sciatic nerve injury

**Match the clinical manifestations with different nerve injuries (413-417):**

413. Wrist drop
414. Hand looks flattened and ‘apelike’, ‘carpal tunnel syndrome’, the patient cannot make a fist (index and middle fingers remain straight).
415. Limb hang limply by the side, medially rotated and pronated forearm like a porter or waiter hinting for a tip.
416. Claw hand deformity, the patient is unable to grip a piece of paper placed between fingers.
417. Impaired shoulder abduction movement, loss of skin sensation over lower half of the deltoid muscle and wasting of deltoid muscle.
    a) Radial nerve injury
    b) Ulnar nerve injury
    c) Median nerve injury
    d) Axillary nerve injury
    e) Erb-Duchenne palsy (upper lesion of brachial plexus, C5 and C6 roots)

418. A routine physical examination of an adolescent reveals patellofemoral crepitation. He is asymptomatic. Most likely diagnosis is:
    a) Normal
    b) Subclinical knee injury
    c) Popliteal cyst
    d) Patellofemoral disorders
    e) Idiopathic adolescent anterior knee pain syndrome

419. An adolescent complains of anterior peripatellar knee pain during vigorous physical activities, especially running. He denies history of injury, locking, giving way, or recurrent effusion. Physical examination reveals patellofemoral crepitation. Knee x-ray is unremarkable. Most likely diagnosis is:
    a) Normal
    b) Osgood-Schlatter disease
    c) Discoid lateral meniscus
    d) Osteochondritis dissecans
    e) Idiopathic adolescent anterior knee pain syndrome

420. All of the following are usual treatment for idiopathic adolescent anterior knee pain syndrome **except**:
    a) Flexibility exercises
    b) Ice and heat
    c) Orthoses
    d) Arthroscopic evaluation
    e) NSAIDs (nonsteroidal anti-inflammatory drugs)

421. A 16-year-old boy appears with painful swelling of the knee joint secondary to trauma. The presence of fat globules in the blood aspirated from the knee joint may indicate:
    a) Ruptured popliteal cyst
    b) Occult fracture
    c) Fat embolism
    d) Malignancy
    e) Meniscus injury

422. A 15-year-old girl appears with recurrent right knee effusions. She is a soccer player. Most likely diagnosis is:
    a) Meniscal tear
    b) Fluid embolism
    c) Idiopathic
    d) Benign tumor
    e) Occult fracture

423. The presence of purulent materials inside the knee joint indicates:
    a) Idiopathic
    b) Rheumatoid arthritis

c) Septic arthritis
d) Hemophilia
e) Tuberculosis

424. A 6-year-old boy appears with painless, cystic, swelling behind the left knee. X-ray of the knee is unremarkable. The preferred therapy is:
a) Observation
b) Ice pack
c) Hot compress
d) NSAIDs
e) Surgery

425. A 13-year-old boy appears with history of loud click in the right knee only during knee flexion. Physical examination reveals mild effusion and a positive McMurray test. Anteroposterior x-ray of the knee joint reveals widening of the lateral aspect of the knee joint. Most likely diagnosis is:
a) Osgood-Schlatter disease
b) Fracture lower end of femur
c) Fracture upper end of tibia
d) Fracture patella
e) Discoid lateral meniscus

426. A child appears with vague left knee pain. Physical examination reveals tenderness on the articular cartilage of the medial femoral condyle. She denies history of trauma. Most likely diagnosis is:
a) Discoid lateral meniscus
b) Osteochondritis dissecans
c) Fracture upper end of tibia
d) Fracture upper end of fibula
e) Fracture lower end of femur

427. A 11-year-old boy is diagnosed with osteochondritis dessicans of the left knee. The preferred therapy is:
a) Arthroscopic surgery
b) Open knee surgery
c) Cast
d) Internal fixation
e) Observation, periodic radiographs

428. Most common site of stress fracture is:
a) Femur
b) Tibia
c) Fibula
d) Patella
e) Phalangeal bones

429. An adolescent boy appears with pain along the right medial tibia during exercise. The pain initially appears towards the end of exercise. Subsequently, pain occurs during exercise and continues after exercise. Physical examination reveals tenderness over a 5-15 cm area of the posterior tibialis muscle body (just medial to the right tibia bone) but no tenderness over the tibial bone. X-ray of tibial bone is normal. Most likely diagnosis is:
a) Tibial stress fracture
b) Shin splints
c) Referred knee pain
d) Referred hip pain
e) Hematoma of the posterior tibialis muscle

430. A 15-year-old boy appears with pain over the tibia. He runs several miles per day. Physical examination reveals tenderness (2-5 cm) over the tibia. X-ray of the tibia is normal. The preferred diagnostic study is:
a) Bone scan

b) CT scan
c) MRI
d) Perform oblique x-ray
e) Repeat lateral x-ray

431. Bone scan study reveals an increased uptake in a fusiform (15 cm) pattern along the periosteal surface of the tibial bone. Most likely diagnosis is:
a) Shin splints
b) Tibial stress ulcer
c) Periosteal hematoma
d) Osteomyelitis
e) Osteosarcoma

432. The treatment for shin splints and tibial stress fracture is similar. All of the following statements are true **except**:
a) Analgesic medication is used routinely for stress fracture.
b) Orthopedic consultation is indicated in navicular stress fracture.
c) Rest is indicated in both shin splints and tibial stress fracture.
d) Correcting training errors and kinetic chain dysfunction.
e) Use of appropriate running shoes after healing.

**Match different knee injuries (433-437):**

433. Valgus blow (directed inward) to the outside (lateral) of the knee
434. Injury occurs from being hit directly to the knee, landing off balance from a jump, or quickly changing direction while running.
435. Injury occurs from a direct blow to the proximal tibia (e.g., kick in martial arts or a dashboard injury).
436. Injury occurs as a noncontact when the quadriceps muscles forcefully contract to extend the knee while the lower leg is externally rotated.
437. This injury is unusual as an isolated injury.
a) Lateral collateral ligament sprains
b) Anterior cruciate ligament sprains
c) Posterior cruciate ligament sprains
d) Medial collateral ligament sprains
e) Patellar dislocations

438. A 16-year-old boy appears with (L) knee pain and swelling during heavy exercise. Physical examination reveals swelling in the left knee and tenderness to palpation over the inferior surface of the lateral facet of the patella. The examiner noted “apprehension sign” (i.e., patient grabs the examiner’s hand) when he attempts to displace the patella laterally. Most likely diagnosis is:
a) Patellar fracture
b) Tearing of quadriceps muscles
c) Absence patella syndrome
d) Fracture of the lower end of femur
e) Patellar subluxation

439. Preferred therapy in majority of patients with acute patellar dislocation is:
a) Nonoperative
b) Reassurance
c) Removal of patella
d) Fixation of patella with tibia
e) Fixation of patella with femur

440. Legg-Calve-Perthes disease may be associated with all of the following conditions **except**:
a) Protein C deficiency
b) Protein S deficiency

c) Thrombophilia
d) Hyperfibrinolysis
e) Hypofibrinolysis

441. Legg-Calve-Perthes disease does not have the following finding:
a) Delayed bone age
b) Disproportionate growth
c) Mild short stature
d) More common in males
e) More common in females

442. A 10-year old male appears with a limp and intermittent pain in the anterior thigh. Physical examination reveals antalgic gait, muscle spasm with mild restriction of motion, especially abduction and internal rotation, mild shortness in stature and proximal thigh atrophy. Most likely diagnosis is:
a) Slipped capital femoral epiphysis
b) Hematoma in the thigh
c) Cerebrovasuclar accident
d) Obstructed inguinal hernia
e) Legg-Calve-Perthes disease

443. Preferred diagnostic study in patients with Legg-Calve-Perthes disease is:
a) Hip sonogram
b) Hip CT scan
c) Nuclear scan
d) Hip MRI
e) Anteroposterior and Lauenstein (frog) lateral x-rays of the pelvis

444. A 15-year-old boy appears with antalgic gait and externally rotated right lower extremity. He has history of recent growth spart. He denies history of trauma. Physical examination reveals lack of internal rotation and increased external rotation in the right hip joint. During examination when the right hip is flexed, it becomes progressively externally rotated. Most likely diagnosis is:
a) Hip synovitis
b) Fracture neck of the femur
c) Femoral nerve paralysis
d) Unstable slipped capital femoral epiphysis
e) Stable slipped capital femoral epiphysis

445. A tall, thin adolescent has SCFE (slipped capital femoral epiphysis). SCFE is most likely due to the following condition:
a) Increased growth hormone
b) Decreased growth hormone
c) Increased level of sex hormones
d) Decreased level of sex hormones
e) Increased level of insulin

446. An obese adolescent has SCFE (slipped capital femoral epiphysis). SCFE is most likely due to the following condition:
a) Increased level of sex hormones
b) Decreased level of sex hormones
c) Increased level of growth hormones
d) Decreased level of growth hormones
e) Decreased level of Insulin

447. A 16-year-old girl has rounded back. Spinal x-ray reveals 35 degrees thoracic kyphosis. The next step in management:
a) Reassurance

b) Orthopedic consultation STAT
c) Bed rest
d) Thoracic brace
e) Restriction of physical activities

448. An immature patient is diagnosed with Scheuermann disease (idiopathic kyphosis). She has thoracic kyphosis 70 degrees. Preferred therapy is:
a) Reassurance
b) Hyperextension exercise program
c) Surgical correction
d) Restriction of physical activities
e) Milwaukee brace

449. A girl is diagnosed to have Scheuermann disease. She has severe pain in the back. She has thoracic kyphosis 95 degrees. Her growth has completed. Preferred therapy is:
a) Surgical correction
b) Milwaukee brace
c) NSAIDs
d) Complete bed rest
e) Hyperextension exercise program

450. A newborn is diagnosed to have congenital kyphosis. Kyphosis is progressing. Preferred therapy is:
a) Reassurance
b) Brace
c) Physiotherapy
d) Hyperextension exercise
e) Surgical intervention

451. The complication of progressive congenital kyphosis is:
a) Paraplegia
b) Hemiplegia
c) Quadriparesis
d) Benign tumor
e) Malignant tumor

452. Congenital kyphosis most likely occurs in utero during the following gestational weeks:
a) 0-12 weeks
b) 13-20 weeks
c) 21-25 weeks
d) 26-30 weeks
e) 31-38 weeks

453. A 6-year-old girl complains of back pain for the last 2 weeks. She likes to stay home with her mother. She does not like to go to school. The next step in management is:
a) Reassurance
b) X-ray of the back
c) CT scan of the back
d) Ultrasonography of the back
e) A careful history and physical examination including musculoskeletal and neurological examination is indicated

454. The important signs in childhood back pain include all of the following conditions **except**:
a) Children older than 5 years of age
b) Bowel or bladder dysfunction
c) Systemic symptoms (e.g., fever, weight loss)
d) Painful left thoracic spine curvature

e) Neurologic findings

455. Most common site of spondylolysis is:
   a) L1
   b) L2
   c) L3
   d) L4
   e) L5

456. A 18-year-old boy experiences low back pain during rowing boat, diving, and gymnastic activities. He has no pain while walking or sitting. Most likely diagnosis is:
   a) Spondylolysis
   b) Spondylolisthesis
   c) Scoliosis
   d) Kyphosis
   e) Intervertebral disc herniation

457. Spondylolisthesis may be associated with the following condition:
   a) Vertebral fracture
   b) Kyphosis
   c) Spinal cord tumor
   d) Scoliosis
   e) Disk space infection

458. When spondylolisthesis is associated with spondylolysis, all of the following findings are noted **except**:
   a) Sacral kyphosis
   b) Increased lumbar lordosis
   c) Prominent anterior abdominal wall
   d) Flattened and prominent buttock
   e) A palpable “step-off” at the lumbosacral region may be noted in high-grade lesion

459. A 2-year-old girl ceases walking and refuses to eat for the last 2 days. She was completely asymptomatic prior to this episode. Mother denies history of trauma. She is afebrile. Physical examination reveals that child maintains the spine in a straight and stiff position. She refuses to flex the lumbar spine. WBC count and ESR are mildly elevated. Most likely diagnosis is:
   a) Back muscle spasms
   b) Vertebral fracture
   c) UTI
   d) Disk space infection
   e) Intervertebral disc herniation

460. Preferred diagnostic study in-patients with disk space infection is:
   a) Plain x-ray
   b) CT scan
   c) Bone scan
   d) Ultrasonography
   e) Aspiration from disk space

461. Preferred diagnostic study to distinguish between disk space infection and vertebral osteomyelitis is:
   a) Bone scan
   b) MRI
   c) CT scan
   d) Plain x-ray
   e) Ultrasonography

462. Most common organism in patients with diskitis is:

a) E. coli
b) Group A streptococcus
c) Salmonella
d) Pseudomonas aeruginosa
e) Staphylococcus aureus

463. Preferred therapy in patients with diskitis is:
a) Vancomycin
b) Vancomycin and aspiration needle biopsy
c) Gentamicin
d) Cefotaxime
e) Surgical drainage

464. Intervertebral disk herniation is more common in Asiatic population than in whites. Most likely cause is:
a) Smaller size of spinal canal
b) Larger size of spinal canal
c) Small vertebral bodies
d) Weakness in ligaments
e) Larger size spinal cord

465. A 17-year-old tall, obese boy appears with sciatic pain for the last 2 weeks. He denies history of trauma. Physical examination reveals a positive straight leg-raising test, scoliosis, lumbar muscle spasm, and a decreased range of lumbar motion. He has no weakness in the lower extremities and reflexes are normal. Most likely diagnosis is:
a) Vertebral fracture
b) Muscle spasms
c) Femoral neck fracture
d) Sciatic nerve injury
e) Intervertebral disk herniation

466. Preferred diagnostic study in patients with intervertebral disk herniation is:
a) CT scan
b) Ultrasonography
c) Plain x-ray
d) MRI
e) Bone scan

467. Initial preferred therapy in patients with intervertebral disk herniation is:
a) Surgical excision
b) Laser therapy
c) Cryotherapy
d) Radiotherapy
e) Bed rest is followed by gradual resumption of activities

468. Most common clinical manifestation in patients with spinal cord tumor or vertebral column tumor is:
a) Scoliosis
b) Kyphosis
c) Loss of sphincter control
d) Back pain
e) Weakness of the lower extremities

469. Most common type of torticollis in newborns is:
a) Muscular
b) Positional deformation
c) Klippel-Feil syndrome
d) Malformation of cervical spine
e) Atlantoaxial subluxation

470. Infants who are at risk of torticollis are:
   a) LGA infants with vertex delivery
   b) SGA infants with vertex delivery
   c) LGA infants with cesarean delivery
   d) AGA infants with vertex delivery
   e) SGA infants with cesarean delivery

471. Muscular torticollis occurs most likely due to:
   a) Positional (postural)
   b) Underlying bony deformity
   c) Mandibular hypoplasia
   d) Short neck
   e) Injury and bleeding within sternomastoid muscle

472. Preferred therapy in patients with muscular torticollis is:
   a) Reassurance
   b) Soft neck collar
   c) Hard neck collar
   d) Vigorous stretching exercise
   e) Gentle passive stretching exercises

473. A newborn is diagnosed to have muscular torticollis. His mother should do the following stretching exercise initially to his newborn child:
   a) Rotate the chin gently opposite the side of the tilt and simultaneously bring the head to the upright position.
   b) Rotate the chin gently opposite the side of the tilt and simultaneously bring the head to the downward position.
   c) Rotate the chin gently toward the side of the tilt and simultaneously bring the head to the upright position.
   d) Rotate the chin vigorously opposite the side of the tilt only.
   e) Rotate the chin vigorously toward the side of the tilt only.

474. A newborn physical examination reveals torticollis. The infant was born by an elective cesarean section. There was no history of trauma. Apgar scores were 9 and 9 at 1 and 5 minutes respectively. There is no mass in the sternomastoid muscle. Most likely diagnosis is:
   a) Traumatic events in utero
   b) Positional torticollis
   c) Muscular torticollis
   d) Trauma during cesarean section
   e) Congenital malformation of the cervical spine

475. Preferred initial step in newborns with suspected congenital malformation of the cervical spine is:
   a) Stretching exercise for the first few weeks of life and see the response
   b) Anteroposterior and lateral cervical spine x-rays before any manipulation exercise
   c) Use soft neck collar for 1 week and see the response
   d) Use hard neck dollar for 2 weeks and see the response
   e) Vigorous exercise for the first 1 month and see the response

476. Most common cause of acquired torticollis in children is:
   a) Posterior fossa tumor
   b) Spinal cord tumor
   c) Idiopathic
   d) Rheumatoid arthritis
   e) Trauma or inflammation of cervical muscles secondary to upper respiratory illness

477. A child appears with ataxia, unsteady gait, and torticollis. Most likely diagnosis is:

a) Phenothiazine overdose
b) Head trauma
c) Neck injury
d) Idiopathic
e) Cerebellar tumor

478. A child has severe throat infection, enlarged lymph nodes in the cervical region, and right side torticollis. The therapy includes all of the following **except**:
a) Rest
b) Anti-inflammatory agents
c) A hard collar
d) Diazepam
e) Antibiotics for suspected bacterial infection

479. Klippel-Feil syndrome is commonly associated with the following condition:
a) Sprengel anomaly
b) Retinoblastoma
c) Osteogenic sarcoma
d) Pyloric stenosis
e) Duodenal atresia

480. Klippel-Feil syndrome includes all of the following findings **except**:
a) Short neck
b) Low hairline
c) Restriction of neck movements
d) Mental retardation
e) Multiple coalitions of cervical vertebrae

481. All of the following congenital abnormalities are associated with Klippel-Feil syndrome **except**:
a) Genitourinary tract
b) Cardiovascular system
c) Spinal cord
d) Auditory system
e) Eye anomaly

482. Initial investigation in patients with Klippel-Feil syndrome is:
a) Audiometry
b) Renal ultrasonography
c) Echocardiogram
d) MRI of the spinal cord
e) Radiographs of the cervical spine

483. The following investigation is indicated in all patients with Klippel-Feil syndrome:
a) Audiometry
b) Echocardiogram
c) Head CT scan
d) Spinal cord MRI
e) Ultrasonography of the genitourinary tract

484. In a normal atlantoaxial joint, normal flexion, extension, and rotational movements occur between:
a) Occiput-C1 and C1-2 joints
b) C2-3 joints
c) C3-4 joints
d) C4-5 joints
e) C5-6 joints

485. Morquio syndrome has the following feature:
- a) Absence of kidneys
- b) Absence of brain
- c) Absence of pancreas
- d) Absence of one lung
- e) Absence of odontoid process

486. A child has Morquio syndrome but she is completely asymptomatic. The following therapy is indicated:
- a) Reassurance
- b) Follow up after 1 month
- c) Follow up after 3 months
- d) Follow up after 12 months
- e) Cervical stabilization

487. A normal child has hypoplasia of the odontoid process. He is completely asymptomatic. There is no evidence of instability in radiographic findings. The preferred therapy is:
- a) Allow contact sports without any restriction
- b) Allow contact sports with a close follow up every month
- c) Restriction of contact sports and follow up after 2 years
- d) Restriction of all sports
- e) Restriction of contact sports and close observation

488. The following statement is appropriate regarding Down syndrome patients and the documented developmental instability of atlantoaxial joints with increasing age:
- a) All patients should not participate in contact sports.
- b) All patients should avoid all sports activities.
- c) All patients are allowed to participate only minor sports activities
- d) Only a few patients are allowed for participation in contact sports
- e) The decision should be made on a case-by-case basis.

489. Important etiology in patients with major depression is:
- a) Environmental
- b) Economic hardship
- c) Organic causes
- d) Excessive school home work
- e) Genetic

490. All of the following are clinical manifestations of depression in children **except**:
- a) Reporting sadness
- b) Phobias
- c) Separation anxiety
- d) Somatic complaints
- e) Behavioral problems

491. The hallmark of psychotic depression in children is:
- a) Hallucinations
- b) Delusions
- c) Insomnia
- d) Irritability
- e) Violent behavior

492. The hallmark of psychotic depression in adolescent is:
- a) Quit school
- b) Violent behavior
- c) Hallucination
- d) Delusions

e) Watch TV all the time and eat excessive food

493. The gold standard to diagnose depression is:
a) The Children Depression Inventory (CDI)
b) Children's Depression Scale (CDS)
c) Depression Self-Rating Scale (DSRS)
d) Center for Epidemiological studies Depression Scale for Children (CESDSC)
e) Clinical interviews with the child and many adults familiar with the child

494. The therapy for depression in children includes all of the following **except**:
a) Tricyclic antidepressants
b) Psychotherapy
c) Cognitive behavioral therapy
d) Fluoxetin (Prozac)
e) Paroxetine (Paxil)

495. Thyroid hormone unresponsiveness is associated with the following condition:
a) Attention-deficit hyperactivity disorder
b) Major depression
c) Hallucinations
d) Delusions
e) Antisocial behavior

496. All of the following statements are true about the patients with thyroid hormone unresponsiveness **except**:
a) Most patients are clinically hyperthyroid
b) Most patients have goiter
c) Levels of T4, T3, free T4, and free T3 are elevated
d) TSH levels are normal or moderately elevated
e) Patients may have clinical features of hypothyroidism (e.g., growth retardation, delayed skeletal maturation, and mild mental retardation).

497. Preferred therapy in patients with ADHD (attention-deficit hyperactivity disorder) is:
a) Reassurance
b) Methylphenydate
c) Close follow up
d) Alpha-2 adrenergic blocker
e) Tricylic antidepressants

498. A child is using Ritalin for ADHD. Ritalin can improve all of the following functions **except**:
a) Hyperactivity
b) Impulsivity
c) Inattention
d) Reading skills
e) Noncompliant behaviors

499. Side effects of stimulants include all of the following **except**:
a) Mild bradycardia
b) Loss of appetite
c) Abdominal discomfort
d) Dysphoria
e) Difficulty sleeping

500. Effects of long-term use of stimulants are the following **except**:
a) Increase addiction
b) Reduce alcohol abuse
c) Do not cause Tourette syndrome

d) Reduce illicit substance abuse
e) Do not increase the risk of seizures

501. A child developed tics after stimulant (e.g., Concerta) therapy for ADHD. The next step in management is:
a) Increase the dose
b) Discontinue the medication
c) Continue the same dose
d) Add another stimulant
e) Reduce the dose

502. DSM-IV (Diagnostic and Statistical Manual) creteria to diagnose patients with ADHD include all of the following **except**:
a) Symptoms begin after the age 7 years.
b) Duration of symptoms for at least 6 months
c) Symptoms must not be due to another disease.
d) Symptoms must be pervasive in nature (present in at least 2 or more settings).
e) Behavior must be abnormal for the child's age and developmental level.

503. Etiology of ADHD includes all of the following **except**:
a) Genetic
b) Environmental
c) Fetal alcohol syndrome
d) Prematurity
e) Maternal use of phenytoin during pregnancy

504. Aggressive children with ADHD may develop:
a) Tics
b) Oppositional-defiant disorder
c) Breath holding
d) Transvestism
e) Transexualism

505. A 8-year-old white boy laughing and moving his hands constantly in the class room. Most likely diagnosis is:
a) Normal
b) Anxiety disorder
c) ADHD
d) Schizophrenia
e) Gilles de la Tourette syndrome

506. Etiology of Gilles de la Tonrette syndrome may include all of the following **except**:
a) Genetic
b) Psychologic
c) Environmental
d) Lack of normal asymmetry within the striatum
e) Normal functions in dopamine receptors.

507. A 7-year-old girl took a large number of acetaminophen tablets. She is being raised by her mother and step father. She has suicidal thoughts. She said that she was sexually abused by her biological father. Most likely interpretation is:
a) Normal child
b) The child took tablets for fun.
c) The child does not understand about the suicidal thoughts.
d) The child cannot be abused by her biological father.
e) The child did not ingest the tablets accidentally.

508. The following statements are true about suicide **except**:

a) Males have less success than that of females.
b) Suicide is rare before puberty.
c) Females attempt suicide more than that of males.
d) Females involve in ingestion and superficial cutting.
e) Males involve in firearms and hanging.

509. A 16-year-old boy is suicidal. He is in a doctor's office. The following statement is not true about the suicide management:
a) A psychiatric consultation is indicated.
b) Parents should be notified.
c) The physician should not enter into a no-suicide contract with patient.
d) A patient belongs to supportive and sympathetic family may go home with an appropriate referral and follow up care.
e) Most patients in the ER should be admitted for 1 or 2 days for further evaluations.

510. A child appears in the ER with history of sudden onset of painless, massive rectal bleeding, and hypotension. The patient has no other intestinal symptoms, but is critically ill. Most likely diagnosis is:
a) Juvenile colonic polyps
b) Peutz-Jeghers syndrome
c) Gardner syndrome
d) Hemangioma
e) Turcot syndrome

511. Preferred diagnostic study in patients with acute, active rectal bleeding due to hemangioma is:
a) CT Scan
b) MRI
c) Plain abdominal x-ray
d) Barium enema
e) Selective mesenteric arteriography

512. Most common childhood bowel tumor is:
a) Juvenile colonic polyp
b) Familial adenomatous polyposis coli
c) Hemangioma
d) Leiomyoma
e) Lymphoma

513. A child has juvenile colonic polyp. Initial clinical manifestations should not include the following finding:
a) Iron deficiency anemia
b) Absence of abdominal pain
c) Bright red rectal bleeding
d) Bleeding occurs during or after defecation
e) Bleeding stops spontaneously

514. Juvenile colonic polyps may be associated with the following finding when patients have abdominal pain:
a) Appendicitis
b) Obstructed inguinal hernia
c) Intussuception
d) Cholecystitis
e) UTI

515. The diagnosis of juvenile colonic polyposis is made by the following investigation:
a) Air-contrast enema
b) Barium enema
c) Positive stool guiac test
d) Colonoscopy

e) Abdominal MRI

516. The preferred therapy in patients with a symptomatic juvenile colonic polyps is:
a) Removal of the polyps by transabdominal polypectomy.
b) Observation for the next 3 months.
c) Periodic blood transfusions and observation.
d) High dose of oral iron therapy.
e) Removal of the polyps at colonoscopy by snare cautery and biopsy.

517. A specimen of intestinal polyp sent for biopsy. Histological examination reveals hamartomatous proliferation of mucous filled cystic glands and stromal elements, increased vascularity, increased infiltration with lymphocytes, polymorphs, eosinophils, and plasma cells. Cystic glands have no adenomatous changes and are covered with a single layer of epithelium. Most likely diagnosis is:
a) Familial adenomatous polyposis coli
b) Hemangiomas
c) Carcinoid tumors
d) Juvenile colonic polyps with potential for malignant changes.
e) Juvenile colonic polyps without potential for malignant changes.

518. The following gastrointestinal polyps in children have 100% risk of malignancy:
a) Juvenile polyposis
b) Peutz-Jeghers syndrome
c) Cowden syndrome
d) Bannayan-Riley-Ruvalcaba syndrome (BRRS)
e) Familial adenomatous polyposis coli

**Match different syndromes with the following findings (519-523):**

519. Gardner syndrome
520. Turcot syndrome
521. Peutz-Jeghers syndrome
522. Cowden syndrome
523. Bannayan-Riley-Ruvalcaba syndrome (BRRS)
a) Mucosal pigmentation of the lips and gums; hamartomas of the gastrointestinal tract; intestinal bleeding with crampy abdominal pain.
b) Multiple colorectal polyposis with primary brain tumor / medulloblastoma.
c) Multiple colorectal polyps, osteomas (mandibular), fibromas, lipomas, epidermoid cysts, and desmoid tumors.
d) Hamartomas in skin, GI tract, breasts, brain, thyroid, and endometrium with uncertain risk of intestinal malignancy.
e) Hamartomas in skin, GI tract, breasts, brain, thyroid, and endometrium without risk of intestinal malignancy.

524. Both Cowden syndrome (CS) and Bannayan-Riley-Ruvalcaba syndrome (BRRS) have associated with the following finding:
a) Mutations of the APC gene.
b) Mutations of a tumor suppressor gene (protein tyrosine phosphatase and tensin homologue)
c) Tumor gene is located in chromosome 5
d) Tumor gene is located in chromosome 19
e) The most important active agent is serotonin.

525. The following is a live virus vaccine:
  a) Mumps
  b) DTP
  c) Pneumococcal
  d) Hepatitis
  e) Meningococcal

**Match different vaccines and their types (526-530):**

526. Hib and pneumococcal conjugate vaccines
527. Capsular meningococcal vaccine
528. Whole-cell pertussis and hepatitis A vaccines
529. Acellular pertussis and hepatitis B vaccines
530. Tetanus and diptheria toxoid
  a) Detoxified exotoxins
  b) Purified protein antigens
  c) Inactivated or killed vaccine
  d) Polysaccharides
  e) Capsular polysaccharides conjugated to carrier proteins

531. Vaccine that contains components of the organism is:
  a) Tetanus
  b) Diptheria
  c) Acellular pertussis
  d) Hepatitis B vaccine
  e) Subunit influenza vaccine

532. Vaccine that needs least number of booster doses is:
  a) MMR
  b) Hepatitis B
  c) DTaP
  d) Hib
  e) IPV

533. The contraindication to give DTaP vaccine is:
  a) Family history seizures
  b) Cerebral palsy
  c) Family history SIDS
  d) Family history of an adverse events after DTP or DTaP administration.
  e) Encephalopathy within 7 days of administration of previous dose of DTP or DTaP.

534. The following conditions are not contraindications to DTaP vaccinations **except**:
  a) Temperature of less than 40.5°C, fussiness or mild drowsiness after a previous dose of DTP or DTaP.
  b) Well-controlled convulsion
  c) Developmental delay
  d) Progressive encephalopathy
  e) Family history of SIDS

535. All of the following conditions are not contraindications to DTaP administration **except**:
  a) Anaphylactic reaction after a previous dose of DTaP or to a vaccine component.
  b) Fever of more than 40.5°C within 48 hours after vaccination with a previous dose of DTP or DTaP.
  c) Seizure within 3 days of receiving a previous dose of DTP or DTaP.
  d) Persistent, inconsolable crying lasting 3 hours or more and within 48 hours of after receiving a previous dose of DTP or DTaP.
  e) Collapsed or shock-like state (i.e., hypotonic, hyporesponsive episode) within 48 hours after receiving a previous dose of DTP or DTaP.

536. A child has family history of seizures at the time of DTaP administration. He is due to receive DTaP vaccine. The next step in management is:
a) DTaP should not be administered.
b) A half-dose of DTaP should be given.
c) One-third dose of DTaP should be given.
d) DTaP should be given without antipyretic therapy.
e) DTaP should be given. Acetaminophen or ibuprofen should be given at the time DTaP administration and every 4-6 hours for 24 hours thereafter to reduce the fever.

537. A child has meningococcal meningitis. Prophylaxis should not be given to the following category:
a) All medical personnel in that unit.
b) Household members.
c) Daycare and nursery school contacts.
d) Persons who had contact with patient's oral secretions during the 7 days before the onset of illness.
e) Physician who intubated the child.

538. A child has meningococcal meningitis. One of the sibling developed fever without URI symptoms. The following statement is true about management of the sibling:
a) Sibling should receive acetaminophen therapy for fever.
b) Reassurance.
c) Sibling should be evaluated in the clinic next day.
d) Sibling should receive ibuprofen therapy for fever.
e) Meningococcal meningitis should be ruled out.

539. The following statement is not true about the prophylaxis of meningococcal disease:
a) Penicillin therapy eradicates nasopharyngeal carrier.
b) Ciprofloxacin (500 mg orally as a single dose) can be used in person 18 years of age or older.
c) Ceftriaxone (125 mg in a single dose IM for children less than 12 years of age and 250 mg in a single dose IM for adolescents 12 years or older) can be used.
d) Rifampin (10 mg/kg orally every 12 hours for a total of four doses, maximum dose 600 mg and 5 mg/kg /dose for infants less than 1 month of age) is used.
e) Hospitalized patients should be isolated for droplet precautions for 24 hours after the onset of therapy.

540. Meningococcal vaccine is not indicated in the following condition:
a) A 22-month-old child with complement component deficiencies.
b) A 26-month-old child with functional asplenia.
c) Travelers to countries with high incidence of meningococcal disease.
d) American military recruits.
e) College students, especially entering freshman and those live on campus.

541. The following anticonvulsant should not be used in children younger than 2 years of age because it produces fatal hepatoxicity:
a) Phenytoin
b) Valproate
c) Diazepam
d) Phenobarital
e) Carbamazepine

542. A 15-month-old child has febrile seizure. The therapy includes all of the following **except**:
a) Treat the underlying cause of fever.
b) Control the fever with antipyretics.
c) Reassurance.
d) Prolonged anticonvulsant prophylaxis is indicated for prevention of recurrent febrile seizures.
e) Oral diazepam can be used to reduce the risk of recurrence in patients with febrile seizures.

543. The side effect of diazepam in children is:
   a) Hepatotoxicity
   b) Hyperactivity
   c) Ataxia
   d) Anxiety
   e) Nephrotoxicity

544. A child has Sydenham chorea. Most likely diagnosis is:
   a) Hyperthyroidism
   b) Cerebellar tumor
   c) Parkinonism
   d) Hypocalcemia
   e) Rheumatic fever

545. The pathogenesis of Sydenham chorea is:
   a) Autoimmune response of the CNS to Group D Streptococci.
   b) Autoimmune response of the CNS to Group B Streptococci.
   c) Autoimmune response of the CNS to Group A Streptococci.
   d) Absence of antineuronal antibodies.
   e) Autoimmune response of the peripheral nervous system to Group A Streptococci.

546. All of the following are clinical signs of Sydenham chorea **except**:
   a) Relaxing and tightening hand shake (milkmaid's grip).
   b) Spooning of the extended hand by flexion at the wrist and extension of the fingers (choereic hand).
   c) Tongue cannot be protruded for longer than a few seconds (darting tongue).
   d) Arms and palms turn outward when held above the head (pronator sign).
   e) A slow and nonjerky movement in the face, trunk, and distal extremities.

547. Preferred therapy in patients with incapacitating Sydenham chorea is:
   a) Reassurance
   b) Diazepam
   c) Haloperidol
   d) Phenothiazine
   e) Valproic acid

548. A long-term use of phenothiazines and haloperidol in patients in Sydenham chorea can lead to the following complication:
   a) SLE
   b) Athetosis
   c) Tardive dyskinesia
   d) Tremor
   e) Dystonia

549. Jitteriness is noted in a full-term infant during a routine physical examination. Most likely diagnosis is:
   a) Hypoglycemia
   b) Hypocalcemia
   c) Hypermagnesemia
   d) Hyponatremia
   e) Normal

550. A newborn infant is jittery when the infant is awake and alert. All of the following conditions can cause jitteriness **except**:
   a) Methadone withdrawal
   b) Intracranial hemorrhage
   c) Hypoxic ischemic encephalopathy
   d) Hyperglycemia

e) Prenatal exposure to maternal marijuana.

551. Extrapyramidal cerebral palsy is often manifested with:
a) Athetosis
b) Chorea
c) Tremor
d) Tics
e) Hypotonia

552. The following medication can cause athetosis:
a) Phenobarbital
b) Phenothiazine
c) Dopamine
d) Phenytoin
e) Dobutamine

553. Dystonia occurs after injury to the following part of the brain:
a) Frontal lobe
b) Parietal lobe
c) Basal ganglia
d) Occipital lobe
e) Cerebellum

554. The following condition does not cause dystonia:
a) Wilson disease
b) Phenothiazines
c) Hallervorden-Spatz disease
d) Segawa disease
e) Gilles de la Tourette syndrome.

**Match different causes of dystonia and their clinical manifestations (555-559):**

555. Hallervorden-Spatz disease
556. Wilson disease
557. Segawa disease
558. Generalized primary dystonia
559. Segmental dystonia
a) Writer's cramp, common in musicians, limited to a specific group of muscles.
b) Progressive dystonia, initially tremors appear unilaterally, then become generalized (wing-beating tremor) and the Kayser-Fleischer ring (copper deposits in cornea).
c) The dystonia is usually diurnal (sometimes incapacitating during the daytime) and improved with sleep.
d) Initially, unilateral (usually foot) extended and rotated position causing tiptoe walking, ultimately all four extremities, trunk, muscles of the face, tongue, speech and swallowing are involved.
e) Excessive accumulation of iron-containing pigments in the globus pallidus and substantia nigra. Progressive dystonia, rigidity, and choreoathetosis are noted in childhood. Spasticity, extensor planter responses, dysarthria, and intellectual deterioration during adolescence.

560. Treatment for drug-induced (e.g., phenothiazine) dystonia is:
a) Oral diphenhydramine
b) Diazepam
c) Phenobarbital
d) Carbamazepine
e) Intravenous diphenhydramine

561. A child developed dystonia. She is receiving phenytoin for seizures. Physician stopped phenytoin and started carbamezepine. However, dystonia persists. Most likely underlying cause is:

a) Structural abnormality of the brain.
b) Childhood schizophrenia.
c) Hypocalcemia
d) Hypoparathyrodism
e) Diabetes insipidus

562. Athetoid cerebral palsy can be produced by all of the following conditions **except**:
a) Asphyxia
b) Genetic
c) Mitochondrial disorder
d) Glutaric aciduria
e) Prematurity

563. A routine physical examination of newborn reveals right side palsy. Most likely cause is:
a) Thrombophilic disorders
b) Forces delivery
c) Vacuum assisted delivery
d) Maternal Hypertension
e) Fetomaternal Transfusion

564. An infant has lymphangiomas of the eyelid. The lesion is progressing. The preferred therapy is:
a) Reassurance
b) Surgical excision
c) Use eye patch
d) Follow up after 2 years
e) Injection of sclerosing agent into the lesion.

565. Lid coloboma (cleftlike deformity) is noted in the following syndrome:
a) Down syndrome
b) Turner syndrome
c) Klinefelter syndrome
d) Noonan syndrome
e) Franceshetti or Treacher collins syndrome

566. A child appears with a firm, nontender nodule in the upper eyelid. The lesion is not red. Most likely diagnosis is:
a) Hordeolum
b) Chalazion
c) Blepharitis
d) Ectropion
e) Entropion

567. Preferred therapy for chalazion is:
a) Reassurance
b) Keflex
c) Amoxicillin-clavulanate
d) Hot compress locally
e) Eye patch

568. A child appears with burning, irritation, and itching of the eye. Physical examination reveals erythema, crusting, and ulceration of the lid margin. There is loss of a few eye lashes. Most likely diagnosis is:
a) Hordeolum
b) Seborrheic blepharitis
c) Pediculosis of the eyelashes
d) Conjunctivitis
e) Staphylococcal blepharitis

569. A child appears with itching, burning, and irritation of the eye. Physical examination reveals greasy, scaly, mildly red lid margins, and absence of lid ulcerations. Most likely associated condition is:
   a) Sinusitis
   b) Cellulitis
   c) Foreign body in the eye
   d) Alopecia
   e) Seborrheic scalp lesion
570. Preferred therapy in patients with staphylococcal blepharitis is:
   a) Oral amoxicillin-clavulanate
   b) Oral keflex
   c) Intravenous nafcillin
   d) Intravenous vancomycin
   e) Local application of antistaphylococcal antibiotic

571. A child appears with blepharospasm. The next step in management after history taking is:
   a) Plain x-ray of the eye
   b) Ultrasonography of the eye
   c) Neurology consultation
   d) CT scan of the eye
   e) Opthalmologic consultation

**Match all the different diagnosis and different causes of lid retraction (572-576):**

572. Thyrotoxicosis
573. Syndrome of the Sylvian aqueduct
574. Marcus Gunn jaw-winking syndrome
575. Normal infant
576. Involvement of anterior mesencephalon
   a) Physiologic or reflexing lid retraction (“eye popping”)
   b) Myogenic retraction of the upper eyelid with Dalrymple sign (a staring appearance), Stellwag sign (infrequent blinking), and von Graefe sign (lag of the upper lid on downward gaze)
   c) Nenrogenic retraction of the lids
   d) Lid retraction is a feature of this syndrome, associated with an obstructive hydrocephalus
   e) Paradoxical retraction of the lid

577. Most common type of nephrotic syndrome in children is:
   a) Idiopathic
   b) Membranous nephropathy
   c) Congenital
   d) Drug-induced
   e) Membranoprofilerative glomerulonephritis

578. Most common organism causing peritonitis in patients with nephrotic syndrome is:
   a) E. coli
   b) Listeria monocytogenes
   c) Pseudomonas aeruginosa
   d) Klebsiella pneumoniae
   e) Staphylococcus aureus

**Match different types of glycogen storage disease and their enzyme deficiencies (579-583):**

579. Type I
580. Type II
581. Type III
582. Type IV

583. Type IX
  a) Glucose 6-phosphatase deficiency
  b) Lysosomal acid alpha-glucosidase deficiency
  c) Debrancher deficiency
  d) Branching enzyme deficiency
  e) Liver phosphorylase kinase deficiency

584. The hallmark of type I glycogen storage disease includes all of the following **except**:
  a) Hypoglycemia
  b) Lactic acidosis
  c) Hyperuricemia
  d) Hyperlipidemia
  e) Markedly elevated liver transaminase levels

585. In type I glycogen storage disease, easy brusing and epistaxis are common. These findings are due to the following reason:
  a) Impaired platelet aggregation and adhesion resulting in prolonged bleeding time
  b) Thrombocytopenia
  c) Factor IX deficiency
  d) Factor XI deficiency
  e) Fragile capillaries

586. In type I glycogen storage disease, “milky” appearance in plasma is due to elevation of the following component:
  a) Cholesterol
  b) Phospholipids
  c) Bile
  d) Lymph
  e) Triglyceride

587. In type I glycogen storage disease, the definitive diagnosis is made by the following study:
  a) Ultrasonography of the liver
  b) CT scan of the liver
  c) MRI of the liver
  d) Nuclear scan of the liver
  e) Biopsy of the liver

588. In patients with type I glycogen storage disease, hypoglycemia should be avoided by the following therapy in early infancy:
  a) Nasogastric drip feeding containing elemental enteral formula or glucose or glucose polymer to provide sufficient glucose during the night. Frequent feedings with high carbohydrate content are provided during the day.
  b) Intravenous glucose (10%) infusion for 24 hours to avoid hypoglycemia.
  c) Intravenous lactated Ringer solution should be given at night and oral glucose solution during the day.
  d) Nasogastric drip of fructose at night and glucose during the day.
  e) Nasogastric drip of galactose at night and fructose during the day.

589. The cure for patients with type I glycogen storage disease is:
  a) Allopurinol
  b) 1-deamino-8-D-arginine vasopressin
  c) Citrate supplement
  d) Granulcyte-colony-stimulating factor
  e) Orthotoic liver transplantation

590. Arterial blood gas (ABG) in patients with BPD (bronchopulmonary dyplasia) usually reveals the following result:

a) Baseline hypoxemia, elevated bicarbonate level, and reduced $Pco_2$ level
b) Normal $Po_2$ level, elevated bicarbonate level, and elevated $Pco_2$ level
c) Elevated $Po_2$ level, elevated bicarbonate level, and elevated $Pco_2$ level
d) Baseline hypoxemia, decreased bicarbonate level, and elevated $Pco_2$ level
e) Baseline hypoxemia, elevated bicarbonate level, and elevated $Pco_2$ level

591. The following metabolic and respiratory conditions are noted in patients with BPD:
a) Respiratory acidosis and metabolic acidosis
b) Respiratory alkalosis and metabolic alkalosis
c) Respiratory acidosis and metabolic alkalosis
d) Absence of respiratory acidosis but presence of metabolic alkalosis
e) Presence of respiratory acidosis but absence of metabolic alkalosis

592. The treatment in patients with BPD includes all of the following **except**:
a) High calorie intake
b) Supplemental oxygen
c) Adequate fluid
d) Furosemide prn
e) Treatment for gastroesophageal reflux, if present

593. An infant with BPD develops wheezing. The infant's condition worsen with beta-agonist therapy. Most likely cause is:
a) BPD with concomitant airway malacia
b) BPD with cardiac failure
c) BPD with bronchial smooth muscle irritation
d) BPD with bronchial smooth muscle hypertrophy
e) BPD with inflammation

594. The following immunoprophylaxis should be given to all patients with BPD during winter months (October to April):
a) Influenza vaccine
b) Synagis vaccine
c) Meningococcal vaccine
d) Varicella vaccine
e) Oral amoxicillin prophylaxis

595. Analysis of the pleural fluid after thoracocentesis reveals a milky fluid containing fat, protein, and lymphocytes. The definitive test to diagnose the chylous fluid is:
a) Examination of the fluid under microscope
b) Measurements of sodium in the fluid
c) Measurements of chloride in the fluid
d) Measurements of cholesterol in the fluid
e) Quantitative measurements of triglyceride in the fluid

596. Majority of infants younger than 1 year of age with chylothorax have the following outcome:
a) Placement of chest tube for a prolonged period of time
b) Need surgical intervention as soon as possible
c) Develop chronic lung disease
d) Develop pleural thickening
e) Spontaneously recover

597. The therapy in patients with chylothorax includes all of the following **except**:
a) Low-fat diet
b) High-protein diet
c) Adequate salt
d) Diuresis
e) Increased caloric intake

598. A child has chylothorax for the last 4 weeks. The child is on a mechanical ventilator and receiving TPN. Conservative therapy failed. The child required several pleural fluid aspirations. The preferred definitive therapy is:
   a) Pleuroperitoneal shunt placement
   b) Inhalation of nitric oxide (20 ppm)
   c) Subcutaneous octreotide
   d) Pressure controlled ventilation with positive end-expiratory pressure
   e) Surgical ligation of the thoracic duct

599. The etiology of convulsion in a patient with hypernatremia that was corrected rapidly (i.e., more than 12 mEq/L every 24 hours) is:
   a) Brain swelling
   b) Hyponatremia
   c) Increased ADH secretion
   d) Diabetes insipidus
   e) Brain cell hypotrophy

600. The opthalmopathy occuring in Graves disease is most likely due to the following condition:
   a) Antibodies against antigens shared by thyroid and eye muscles
   b) Excessive accumulation of the retroorbital fat
   c) Enlargement of the eyeball
   d) Small orbital bones
   e) Associated myasthenia gravis

601. A child has a midline mass in the neck. The mass is noted after an upper respiratory infection. The mass is painless and moves vertically with swallowing and tongue protrusion. Most likely diagnosis:
   a) Branchial cleft
   b) Enlarged lymph nodes
   c) Cricoid tumor
   d) Enlarged thyroid gland
   e) Thyroglossal duct cyst

602. Most common branchial cleft cyst is:
   a) First
   b) Second
   c) Third
   d) Fourth
   e) Fifth

603. Treatment for a secondary infection in the branchial cleft cyst is:
   a) Local antibiotic therapy
   b) Hot compress
   c) Local corticosteroid therapy
   d) Systemic antibiotic therapy
   e) Reassurance

604. The anemia noted in patients with chronic renal failure is:
   a) Hypochromic and microcytic
   b) Hypochromic and normocytic
   c) Normochromic and normocytic
   d) Hyperchronic and macrocytic
   e) Normochromic and microcytic

605. Laboratory findings in patients with chronic renal failure include all of the following in the serum **except**:
   a) Elevated serum BUN and creatinine

b) Elevated serum uric acid
c) Elevated potassium and phosphorus
d) Decreased sodium and calcium
e) Decreased cholesterol and triglyceride

606. A child developed hypertension and acute renal failure (ARF). The precise cause of ARF is found by the following investigation:
a) Echocardiogram
b) Serum potassium level
c) Renal scan
d) Renal ultrasonography
e) Renal biopsy

607. Tumor lysis syndrome is primarily caused by obstruction of the tubules by the following components:
a) Uric acid crystals
b) Elevated calcium levels
c) Elevated potassium levels
d) Elevated phosphorus levels
e) Decreased fluid levels

608. The use of aspirin is contraindicated in the following condition:
a) Flu-like symptoms
b) Kawasaki disease
c) Rheumatic fever
d) Pain
e) Fever

609. The side effects of aspirin are all of the following **except**:
a) Gastric ulcers
b) Hyperacusis
c) Tinnitus
d) Bleeding from gums
e) Bronchospasm in asthmatics

610. A child is receiving aspirin for rheumatic fever (60-100 mg/kg/day every 6 hours). The serum level of aspirin should be obtained:
a) 30 minutes after a dose
b) 1 hour after a dose
c) 2 hours after a dose
d) 3 hours after a dose
e) 4 hours after a dose

611. Salicylates poisoning produces the following metabolic and respiratory disorders:
a) First respiratory alkalosis, then metabolic acidosis
b) First respiratory acidosis, then metabolic acidosis
c) First respiratory acidosis, then metabolic alkalosis
d) Respiratory alkalosis only
e) Metabolic acidosis only

612. The most important component to determine the plasma osmolality is:
a) Sodium
b) Potassium
c) Glucose
d) BUN
e) Creatinine

613. The following condition increases plasma osmolality:
   a) Hyponatremia
   b) Hypercalcemia
   c) Hyperphosphatemia
   d) Hyperkalemia
   e) Hyperglycemia

614. In diabetic ketoacidosis (DKA), hyperglycemia produces the following physiologic changes in the body:
   a) A shift of water from the extracellular space to the intracellular space
   b) A shift of glucose from the extracellular space to the intracellular space
   c) A shift of water from the intracellular space to the extracellular space
   d) A shift to glucose from the intracellular space to the extracellular space
   e) A shift of sodium from the extracellular space to the intracellular space

615. Hyperglycemia causes dilution of the sodium (hyponatremia). The corrected sodium (Na) is the more reliable indicator of the patient's true ratio of total body sodium (Na) to the total body water (TBW). A patient's serum Na is 125 and glucose is 500. The corrected sodium (Na) is:
   a) 140
   b) 135
   c) 133
   d) 131
   e) 130

616. **Osmolar gap** is the difference between the measured osmolality (degree of freezing point depression) and calculated osmolality (Na x 2 + glucose/18 + BUN/2.8). Normal values are within 10 mOsm/kg. Increased osmolar gap indicates unmeasured osmoles. All of the following are unmeasured osmoles **except**:
   a) Mannitol
   b) Ethanol
   c) Methanol
   d) Ethylene glycol
   e) Blood urea nitrogen

617. The presence of osmolar gap indicates the following condition:
   a) Diabetic ketoacidosis
   b) Diabetes insipidus
   c) Acute renal failure
   d) Hypernatremic dehydration
   e) Poisoning with methanol

618. A patient has low serum sodium, but normal serum osmolality. Most likely diagnosis is:
   a) Pseudohyponatremia
   b) True hyponatremia
   c) Hyperaldosteronism
   d) Hyponatremic dehydration
   e) Hypoaldostreonism

619. The following hormone is secreted when the serum osmolality is increased:
   a) Growth hormone
   b) FSH
   c) LH
   d) Oxytocin
   e) ADH

620. The site of action of ADH in kidneys for water absorption is:
   a) Collecting ducts
   b) Proximal convoluted tubules

c) Descending loops of Henle
d) Ascending loops of Henle
e) Distal convoluted tubules

621. Mechanism of action of ADH in kidneys is:
a) $V_1$ receptors
b) $V_2$ receptors
c) $V_3$ receptors
d) $V_4$ receptors
e) $V_5$ receptors

622. The response of ADH secretion is detectable first when the plasma osmolality changes:
a) 1%
b) 5%
c) 10%
d) 15%
e) 25%

623. A child has decreased plasma volume but the serum osmolality is normal. Most likely responses are:
a) Decreased thirst and decreased ADH secretion
b) Increased thirst and increased ADH secretion
c) Increased thirst and normal ADH secretion
d) Decreased thirst and increased ADH secretion
e) Increased thirst and decreased ADH secretion

624. All of the following medications increase ADH secretion **except**:
a) Nicotine
b) Narcotics
c) Barbiturates
d) Cholenergics
e) Anticholinergics

625. SIADH (syndrome of inappropriate ADH secretion) is characterized by all of the following **except**:
a) Hyponatremia
b) Urine more than 100 m0sm/kg (concentrated)
c) A normal-to-high urine sodium
d) Low serum uric acid
e) Low plasma volume

626. Most cases of SIADH in children is due to the following cause:
a) Encephalitis
b) Brain tumors
c) Head trauma
d) AIDS
e) Excess administration of vasopressin in the treatment of central diabetes insipidus

627. A child had hypothalamic-pituitary surgery 1 week ago. About 35% of cases develop the following complication 1 week after surgery:
a) Weight Loss
b) Excess urinary output
c) Diabetes insipidus
d) SIADH
e) Hypernatremia

628. All of the following drugs increase vasopressin secretion or mimic vasopressin action **except**:
a) Vinblastin, vincristine

b) Carbamezepine
c) Chlorpropamide
d) Phenobarbital
e) Tricyclic antidepressants

629. Mechanism of action of furosemide:
a) Increases sodium and chloride absorption at the ascending loop of Henle and distal tubule
b) Inhibits sodium and chloride reabsorption at the ascending loop of Henle and distal tubule
c) Increases water absorption in the collecting ducts
d) Increases oxytocin release
e) Inhibits ADH secretion

630. Most common cause of volume depletion in children is:
a) Cystic fibrosis
b) Burns
c) Gastroenteritis
d) Excessive exercise
e) Inadequate intake of sodium

631. In SIADH, there is an excess of total body water. Most of the water is present in:
a) Blood
b) Lymphatic
c) Intracellular space
d) Intercellular space
e) Peritoneal cavity

**Match the following conditions (632-636):**

632. Congenital adrenal hyperplasia (CAH)
633. Cerebral salt wasting
634. Diuretic therapy
635. Bartter syndrome
636. Premature infants
(a) Urinary sodium loss is due to tubular disorders
(b) Inability to conserve sodium
(c) Iatrogenic renal sodium wasting
(d) Absence of aldosterone causes sodium wasting
(e) Brain natriuretic peptide that produce volume depletion due to loss of sodium in kidneys.

637. All of the following conditions cause renal retention of sodium during volume depletion **except**:
a) Liver failure
b) Congestive heart failure
c) Nephrotic syndrome
d) Gastroenteritis
e) Other cause of hypoalbuminemia

638. The principal regulator of volume status is:
a) Sodium balance
b) Potassium balance
c) Calcium balance
d) Phosphorus balance
e) Urea balance

639. The principal organ determines the sodium balance is:
a) Gastrointestinal tract
b) Liver

c) Brain
d) Kidneys
e) Adrenals

640. The following component causes direct stimulation of the proximal tubule to increase sodium reabsorption:
a) Renin
b) Angiotensin I
c) Angiotensin II
d) Corticosteroids
e) ADH

641. The following statements are not true about hypernatremia:
a) Sodium intoxication is not frequently iatrogenic in the hospital during correction of metabolic acidosis with sodium bicarbonate.
b) Hypernatremia in diabetes mellitus only develops if the patient is unable to drink water or does not have access to water.
c) Central diabetes insipidus (DI) and genetic form of nephrogenic DI typically produce very dilute urine and massive urinary water losses.
d) Premature babies under phototherapy or under radiant warmer develop hypernatremia.
e) Ineffective breast feeding (e.g., primipara) can cause severe hypernatremic dehydration.

642. A overly rapid correction of hyponatremia results in:
a) Extrapontine myelinolysis
b) Intraventricular bleed
c) Subdural bleed
d) Subarachnoid bleed
e) Central pontine myelinolysis (CPM)

643. Thrombotic complications occur in severe hypernatremia is due to the following reasons:
a) Overhydration and hypocoagulability
b) Thrombocytosis
c) Thrombocytopenia
d) Increased fibrinogen levels
e) Dehydration and possibly hypercoagulability

644. Pathogenesis of hyponatremia is usually due to the following factors:
a) Sodium loss only
b) Inadequate intake of sodium
c) Potassium retention
d) Chloride loss only
e) A combination of sodium loss and water retention

645. A child has viral diarrhea. The diarrheal fluid is replaced with formula. The following statement is not true:
a) The child will develop hypernatremia
b) Viral diarrhea has sodium concentration on an average about 50 mEq/L
c) Formula contains about 10 mEq/L of sodium
d) The child will develop hyponatremia
e) The child will have volume depletion

646. Volume depletion causes all of the following changes **except**:
a) Stimulates ADH secretion
b) Increases the GFR (glomerular filtration rate)
c) Enhances water reabsorption in the proximal tubules.
d) Reduces water delivery to the collecting ducts.
e) ADH increases renal water retention in the collecting ducts.

647. Effects of thiazide diuretic are the following:
   a) Concentrate the urine and hypernatremia
   b) Dilute the urine
   c) Osmotic diuresis
   d) Concentrate the urine and normal sodium level in the serum
   e) Concentrate the urine and can cause severe hyponatremia

648. The following component acts as an osmotic diuretic in patients after relief of an urinary obstruction and during the polyuric phase of ATN (acute tubular necrosis):
   a) Glucose
   b) Urea
   c) Sodium
   d) Potassium
   e) Calcium

**Match the following conditions (649-653):**

649. Pseudohypoaldosteronism
650. CAH (congenital adrenal hyperplasia)
651. Type II Renal tubular acidosis (RTA)
652. Acquired tubulointerstitial nephritis
653. Posterior urethral valve with obstructive uropathy
   a) Produces salt wasting but may also develop hypernatremia due to high water loss and impaired urinary concentrating ability.
   b) Elevated aldosterone levels, a defect in sodium channel or lack of aldosterone receptors
   c) Due to medication or infection, may cause salt wasting and other tubular dysfunctions.
   d) Produces hyponatremia, hyperkalemia, and metabolic acidosis due to aldosterone deficiency
   e) Increased excretion of sodium and bicarbonate in the urine

**Match the different causes of hyponatremia (654-658):**

654. “Beer potomania”
655. Glucocorticoid deficiency
656. Acute hyponatremia
657. Chronic hyponatremia
658. Hyponatremia in the hospital
   a) Inability to excrete high water load
   b) Inappropriate retention of water by the kidneys but the exact mechanism is unknown.
   c) Received hypotonic intravenous fluid
   d) Child abuse
   e) Received water but limited protein and sodium

659. Most of the symptoms of hyponatremia is due to the following:
   a) Brain cell hypotrophy
   b) Brain cell swelling
   c) Brain cell hyperplasia
   d) Increased extracellular osmolality
   e) Movements of water from the intracellular space to the extracellular space

660. Symptoms and signs of hyponatremia include all of the following **except**:
   a) Increased reflexes
   b) Anorexia
   c) Vomiting
   d) Lethargy
   e) Seizures

661. Most common cause of hyperkalemia in children is:
   a) Miscalculation of potassium
   b) Sepsis
   c) Hyponatremia
   d) Hemolysis during phlebotomy
   e) Necrotizing entercolitis

662. Most serious electrolyte abnormality is:
   a) Hyponatremia
   b) Hypokalemia
   c) Hypernatremia
   d) Hyperkalemia
   e) Hypocalcemia

663. All of the following statements are true about potassium **except**:
   a) Body potassium decreases during puberty.
   b) Intracellular potassium concentration is much higher than the plasma concentration.
   c) Majority of the extracellular potassium is in the bone.
   d) Less than 1% of total body potassium is in plasma.
   e) Plasma concentration does not always reflect the total body potassium content.

664. Hyperkalemia increases the secretion of the following hormone:
   a) Insulin
   b) Glucagon
   c) ADH
   d) Oxytocin
   e) FSH

665. All of the following conditions produce hyperkalemia **except**:
   a) Alkaline pH
   b) Exercise
   c) Mannitol
   d) Increased osmolality
   e) Alpha-adrenergic agonist

666. All of the following conditions produce hypokalemia **except:**
   a) Insulin
   b) Beta-agonist
   c) Alkaline pH
   d) Increased aldosterone
   e) Renal failure

667. Gordon syndrome (pseudohypoaldosteronism, type 2) has all of the following features **except**:
   a) Hypertension
   b) Salt retention
   c) Hypokalemia
   d) Metabolic acidosis
   e) Autosomal dominant

668. The predominant mechanism of medication-induced hyperkalemia is:
   a) Increased renal excretion
   b) Stimulation of aldosterone
   c) Decreased GI loss
   d) Increased GI absorption
   e) Decreased renal excretion

669. The following medication should not be used during anesthesia in patients with hyperkalemia:
    a) Succinylcholine
    b) Furosemide
    c) Phenobarbital
    d) Phenytoin
    e) Penicillin

670. All of the following medications cause hyperkalemia **except**:
    a) Digoxin intoxication
    b) Fluoride intoxication
    c) Beta-blocker
    d) ACE inhibitors
    e) Furosemide

671. Most common cause of hypokalemia in children is:
    a) Decreased intake
    b) Gastroenteritis
    c) Hyperaldosteronism
    d) Laxative abuse
    e) Hypokalemic periodic paralysis

672. Hypocalcemia occurs most commonly in:
    a) Premature neonates
    b) Term neonates
    c) LGA infants
    d) SGA infants
    e) AGA infants

673. Most common cause of hypocalcemia in neonates is:
    a) Decreased calcium intake
    b) Increased renal loss of calcium
    c) Increased phosphorus intake
    d) Sepsis
    e) Transient physiologic hypoparathyroidism

674. Mechanisms for early neonatal hypocalcemia are the following:
    a) Absence of transplacental delivery of calcium, relative hyperparathyroidism, and relative refractoriness of the target cells to PTH (parathyroid hormone)
    b) Only due to absence of transplacental delivery of calcium
    c) Delayed introduction of oral feedings with calcium
    d) Increased intake of high phosphorus containing milk
    e) Absence of transplacental delivery of calcium, relative hypoparathyroidism, and relative refractoriness of the target cells to parathyroid hormone (PTH)

675. In vitamin D deficiency, hypocalcemia is primarily due to the following condition:
    a) Increased excretion of calcium through kidneys
    b) Increased intestinal absorption of phosphorus
    c) Poor intestinal absorption of calcium
    d) Hypoparathyroidism
    e) Hyperparathyroidism

676. Children with vitamin D deficiency have all of the following findings **except**:
    a) Elevated serum levels of PTH (parathyroid hormone)
    b) Increased osteoclastic activities
    c) Elevated serum levels of alkaline phosphastase
    d) Increased intestinal absorption of phosphorus

e) Increased urinary excretion of phosphorus

**Match the different causes of hypoparathyroidism (677-681):**

677. Wilson disease
678. Thalassemia
679. Kearns-Sayre syndrome
680. After neck surgery
681. Graves disease
    a) Iron overload
    b) Disruption of blood supply to the parathyroid glands
    c) A mitochondrially inherited disorder
    d) Radioactive ablation of the thyroid gland
    e) Copper overload

682. A patient’s took a large amount of vitamin D. All of the following statements are true about this condition **except**:
    a) Elevated serum calcium levels
    b) Elevated serum phosphorus levels
    c) Decreased levels of PTH
    d) Hypercalcemia may persist for weeks to months.
    e) Glucocorticoids cause further hypercalcemia

683. Most common cause of clinically significant hypermagnesemia is:
    a) Excessive intake
    b) Hypercalcemia
    c) Hyperphospatemia
    d) Hypocalcemia
    e) Hyperkalemia

684. Most common cause of hypermagnesemia in newborns is:
    a) TPN
    b) Hypercalcemia
    c) Sepsis
    d) Hypocalcemia
    e) Mother received magnesium sulfate

685. A child’s serum magnesium level is more than 15 mg/dL. The organ most likely affected is:
    a) Kidneys
    b) Pancreas
    c) Liver
    d) Brain
    e) Heart

686. A child’s EKG reveals prolonged PR, QRS, and QT intervals. The serum magnesium level is 17 mg/dL. Preferred initial therapy is:
    a) Intravenous fluids
    b) Loop diuretics
    c) Peritoneal dialysis
    d) Hemodialysis
    e) Intravenous calcium gluconate

687. A newborn’s serum magnesium level is 5 mg/dL. The child is asymptomatic. Mother received magnesium sulfate. The preferred therapy is:
    a) Intravenous calcium
    b) Intravenous hydration

c) Intravenous furosemide
d) Oral calcium therapy
e) Reassurance

688. The principal regulator of phosphorus balance is:
a) Kidneys
b) Bones
c) GI tract
d) Liver
e) Spleen

689. A patient with DKA (diabetic ketoacidosis) develop hypophospatemia during therapy. Most likely due to the following condition:
a) Hypocalcemia
b) Increased loss of phosphorus in urine
c) Hypomagnesemia
d) Hypoparathyroidism
e) Decreased intake of phosphorus

690. Refeeding therapy begins in an adolescent with anorexia nervosa. The following complication usually occurs within the first 5 days of refeeding therapy:
a) Hypercalcemia
b) Hyperalbuminemia
c) Hypernatremia
d) Hypercholesterolemia
e) Hypophosphatemia

691. A normal acid-base balance is maintained by the following organs:
a) Heart and lungs
b) Lungs and brain
c) Brain and kidneys
d) Heart and brain
e) Lungs and kidneys

692. Cell function is affected by the following condition:
a) Arterial pH
b) Venous pH
c) Intracellular pH
d) Capillary pH
e) Cell size

693. A child with BPD (bronchopulmonary dysplasia) is treated with furosemide. Furosemide therapy can cause the following condition:
a) Metabolic acidosis
b) Metabolic alkalosis
c) Respiratory alkalosis
d) Respiratory acidosis
e) Both respiratory and metabolic acidosis

694. The respiratory compensation for a metabolic acidosis usually takes:
a) 12-24 hours
b) 24-48 hours
c) 48-72 hours
d) 72-96 hours
e) 4-5 days

695. The metabolic compensation for a respiratory acidosis usually takes:
  a) 1- 2 days
  b) 2 - 3 days
  c) 3-4 days
  d) 4-5 days
  e) 5-6 days

**Match appropriate compensation in acid-base disorders (696-700):**

696. Bicarbonate falls by 2 for each 10 mm Hg decrease in the $Pco_2$
697. Bicarbonate increases by 3.5 for each 10 mm Hg increase in the $Pco_2$
698. Bicarbonate falls by 4 for each 10 mm Hg decrease in the $Pco_2$
699. Bicarbonate increases by 1 for each 10 mm Hg increase in the $Pco_2$
700. $Pco_2$ increases by 7 mm Hg for each 10 mEq/L increase in the serum bicarbonate
  a) Metabolic alkalosis
  b) Acute respiratory alkalosis
  c) Acute respiratory acidosis
  d) Chronic respiratory alkalosis
  e) Chronic respiratory acidosis

701. A child develops metabolic acidosis. The serum bicarbonate level is 8 mEq/L. Calculate the expected respiratory compensation (i.e., $Pco_2$):
  a) 16 ± 2
  b) 18 ± 2
  c) 20 ± 2
  d) 22 ± 2
  e) 24 ± 2

702. In renal failure, the compensation is inadequate and a metabolic acidosis begins to develops when the GFR (glomerular filtration rate) is less than:
  a) 5-10% of normal
  b) 10-20% of normal
  c) 20-30% of normal
  d) 30-40% of normal
  e) 40-50% of normal

703. Ethylene glycol toxicity causes:
  a) Liver failure
  b) Renal failure
  c) Pancreatic failure
  d) Cardiac failure
  e) Splenic failure

704. Methanol toxicity causes:
  a) Damage to the optic nerve and CNS
  b) Renal failure
  c) Cardiac failure
  d) Liver failure
  e) Adrenal failure

**Match the following RTAs (renal tubular acidosis) (705-707):**

705. Proximal RTA (type II)
706. Distal RTA (type I)
707. Hyperkalemic RTA (type IV)

a) In most patients, this RTA is a part of Fanconi syndrome. Patients manifest with glycosuria, aminoaciduria, and excessive loss of phosphate and uric acid in the urine. The serum uric acid level is low. Patients have rickets and/or FTT (failure to thrive). Urine pH is less than 5.5 in untreated patients.
b) This RTA is due to either absence of aldosterone or inability of the kidney to respond to aldosterone.
c) This RTA patients manifest with failure to thrive due to chronic metabolic acidosis. The patients may have hypokalemia, hypercalcuria, nephrocalcinosis, and nephrolithiasis. Urine pH is more than 5.5 despite metabolic acidosis.

708. The following type of RTA (renal tubular acidosis) produces deafness:
a) Proximal RTA
b) Hyperkalemic RTA
c) Fanconi syndrome
d) Autosomal dominant distal RTA
e) Autosomal recessive distal RTA

709. In DKA (diabetic ketoacidosis), metabolic acidosis is due to the production of the following components:
a) Acetoacetic acid and beta-hydroxybutyric acid
b) Citric acid and formic acid
c) Carboxylic acid and butyric acid
d) Acetic acid and butyric acid
e) Citric acid and acetic acid

710. The characteristic odor of breath in patients with DKA is due to the following component:
a) Alcohol
b) Acetone
c) Acetoacetic acid
d) Hydroxybutyric acid
e) Oxalic acid

711. Salicylate intoxication in children includes all of the following features **except**:
a) Hypothermia
b) Seizures
c) Hyperventilation
d) Metabolic acidosis
e) Coma

712. Gastric fluid contains a large amount of the following component:
a) Sodium chloride
b) Potassium chloride
c) Hydrochloric acid
d) Sodium bicarbonate
e) Acetic acid

713. Loop or thiazide diuretic can produce the following condition:
a) Metabolic acidosis
b) Metabolic alkalosis
c) Respiratory acidosis
d) Respiratory alkalosis
e) A combined respiratory and metabolic alkalosis

714. Diuretic use causes metabolic alkalosis by the following mechanisms **except**:
a) ‘Expansion alkalosis’
b) Decreases bicarbonate loss
c) Increases delivery of sodium to the distal nephron
d) Hypokalemia
e) Volume depletion

715. All of the following findings are noted in patients with cystic fibrosis **except**:
    a) Volume depletion
    b) Hypokalemia
    c) Metabolic acidosis
    d) Hyponatremia
    e) Metabolic alkalosis

716. Diuretic therapy produces the following urinary finding:
    a) Chloride level is more than 20 mEq/L.
    b) Sodium level is decreased .
    c) Calcium level is decreased .
    d) Magnesium level is decreased .
    e) Potassium level is decreased .

717. Most useful test in differentiating among the causes of a metabolic alkalosis is:
    a) Measurement of the urinary sodium concentration
    b) Measurement of the urinary potassium **concentration**
    c) Measurement of the urinary chloride concentration
    d) Measurement of the urinary calcium concentration
    e) Measurement of the urinary calcium and creatinine ratio

718. Most common causes of metabolic alkalosis are:
    a) Bartter syndrome and Gitelman syndrome
    b) Diuretics and gastric losses
    c) Baking soda ingestion
    d) Bulimia
    e) Renovaseular disease and a renin - secreting tumor

**Match the following conditions (719-723):**

719. Baking soda ingestion
720. Bartter syndrome and Gitelman syndrome
721. Bulimia
722. Surreptitious diuretic use
723. Cystic fibrosis
    a) Metabolic alkalosis, hypokalemia, and elevated sweat chloride test
    b) The urine chloride is always elevated, urine toxicology screen for diuretics is negative, and normal blood pressure is noted
    c) Hypernatremia and metabolic alkalosis
    d) Hypokalemia, metabolic alkalosis, and the urine chloride is low
    e) Hypokalemia, metabolic alkalosis, elevated urine chloride, and urine toxicology screen is positive for diuretic

**Match the following conditions (724-726):**

724. Both renin and aldosterone levels are elevated
725. Renin is low and aldosterone is high
726. Both renin and aldosterone levels are low
    a) Children with Cushing syndrome
    b) Renovasular disease or a renin-secreting tumor
    c) Adrenal adenomas or hyperplasia and glucocorticoid-remediable aldosteronism

**Match the following conditions (727-728):**

727. Alkalemia
728. Acidemia

a) Potassium moves into cells
b) Potassium moves out of cells

729. An infant received baking soda as a "home remedy" for colic. Most likely complication is:
a) Hypokalemia
b) Hypercalcemia
c) Hyperkalemia
d) Hyponatremia
e) Elevated sodium bicarbonate

730. A child with congenital heart disease receiving loop diuretic. His serum bicarbonate level is 31. The preferred management is:
a) Stop loop diuretic
b) Start digoxin
c) Add potassium chloride
d) Switch to another diuretic
e) No intervention is indicated

731. A child is receiving intermittent nasogastric suction. The rapidly increased serum bicarbonate level is 36. Her abdomen is soft. The preferred management is:
a) Continue nasogastric suction
b) Nephrology consultation
c) GI consultation
d) Stop nasogastric suction
e) Nasogastric suction should be increased and continuous

732. Preferred therapy for patients with a moderate to severe metabolic alkalosis is:
a) Furosemide
b) Thiazide diuretic
c) Discontinue potassium
d) Sodium bicarbonate
e) To treat underlying cause

733. A child needs diuretic therapy for cardiac failure. He develops metabolic alkalosis due to furosemide therapy. The preferred therapy is:
a) Discontinue furosemide
b) Increase the dose of digoxin
c) Add Kcl
d) Give oral sodium chloride
e) Start spironolactone

734. Most common method of spread of miliary tuberculosis is:
a) Blood
b) Nerve
c) Lymphatic vessels
d) Direct spread
e) Upper airway

**Match the following Gell and Coombs classification in different conditions (735-738):**

735. Type I (immediate hypersensitivity reactions)
736. Type II (cytotoxic antibody reactions)
737. Type III (immune complex reactions)
738. Type IV (delayed-type hypersensitivity reaction)
a) Tuberculin test (PPD), allergic contact dermatitis
b) Serum sickness

c) Drug-induced hemolytic anemia or thrombocytopenia
d) Drug or drug metabolite interacts with preformed drug-specific IgE antibodies

**Match the following conditions (739-740):**

739. Delayed maculopapular reactions to a number of antibodies
740. Morbiliform rash noted with ampicillin or amoxicillin therapy in Epstein Barr virus infection
a) Unknown
b) T cells and eosinophills

**Match the following conditions (741-742):**

741. Early phage response of allergic rhinitis
742. Late phase response of allergic rhinitis
a) IgE mediated
b) Type IV or T cell mediated

743. The side effects of acetazolamide includes all of the following **except**:
a) Hypokalemia
b) Metabolic alkalosis
c) Muscle weakness
d) Renal calculi
e) Drowsiness

**Match the following conditions (744-746):**

744. Chloride-responsive metabolic alkalosis
745. Chloride-resistant metabolic alkalosis
746. Liddle syndrome
a) Triamterene or amiloride is effective therapy
b) Volume repletion is contraindicated
c) Sodium chloride and potassium chloride therapies are indicated

**Match the following conditions (747-751):**

747. Normal blood pressure
748. Metabolic alkalosis, hypokalemia, and volume loss
749. Loss of sodium and chloride like patients on loop diuretics (e.g., furosemide)
750. Loss of sodium and chloride with volume depletion due to an absence of thiazide-sensitive sodium chloride transporter in the distal tubule
751. Presence of hypocalcuria and hypomagnesemia
a) Bartter syndrome
b) Gitelman syndrome
c) Both syndromes

752. A narcotic overdose can produce the following condition:
a) Respiratory acidosis
b) Metabolic acidosis
c) Respiratory alkalosis
d) Metabolic alkalosis
e) No changes at all

753. Increased production of carbon dioxide occurs in all of the following conditions **except**:
a) Fever
b) Excess caloric intake
c) Hypothyroidism
d) Excessive physical activities

e) Increased respiratory work

754. The following statement is **not** true:
a) In primary metabolic acidosis, despite a decrease in carbon dioxide concentration, appropriate respiratory compensation is called “compensatory respiratory alkalosis”.
b) In primary metabolic alkalosis, appropriate respiratory compensation resulting in elevated carbon dioxide to **attenuate** the increase in the pH.
c) In primary respiratory acidosis, the metabolic compensation is mediated by the kidneys.
d) In primary respiratory acidosis, kidneys increase hydrogen ion excretion, thereby increasing bicarbonate generation and serum bicarbonate concentration
e) In primary respiratory alkalosis, kidneys increase bicarbonate excretion to compensate for respiratory alkalosis

755. The complication of ECMO (extracorporeal membrane oxygenation) therapy is:
a) Metabolic alkalosis
b) Metabolic acidosis
c) Respiratory acidosis
d) Respiratory alkalosis
e) A combination of respiratory and metabolic acidosis

756. A child has chronic respiratory acidosis. He developed acute respiratory illness. He is intubated and is placed on a mechanical ventilator. The therapy includes all of the following **except**:
a) To correct the hypoxia
b) To correct the pH
c) To treat the underlying lung conditions
d) Bacterial infection should be treated with appropriate antibiotics
e) A rapid lowering of the carbon dioxide is indicated.

757. A child developed severe respiratory acidosis due to narcotic overdose. The preferred therapy is:
a) Naloxone
b) Sodium bicarbonate
c) Hyperventilation
d) Physical stimulation
e) Stimulant medication

758. Hypercapnia produces:
a) Vasoconstriction of cerebral vessels
b) Vasodilatation of pulmonary vessels
c) Increases tissue oxygenation in the periphery
d) Increases serum pH
e) Vasodilatation, especially cerebral vessels

759. A child is on a mechanical ventilator and is receiving 80% oxygen ($F_{IO2}$ 0.8). ABG (arterial blood gas) reveals $Po_2$ of 100 mm Hg, $Pco_2$ of 40, and pH 7.35. The alveolar-arterial oxygen gradient (A-a gradient) is:
a) 306
b) 350
c) 400
d) 420
e) 480

760. A child develops respiratory acidosis. The preferred method to distinguish between the intrinsic lung disease and the poor respiratory effort is:
a) Arterial pH
b) Arterial $Po_2$
c) Arterial $Pco_2$
d) Venous pH
e) Alveolar-arterial oxygen gradient

761. Acute respiratory alkalosis manifests with all of the following findings **except**:
a) Bradycardia
b) Chest tightness
c) Circumoral numbness
d) Light headedness
e) Paresthesias of the extremities

762. The following condition produces tissue hypoxia without hypoxemia is:
a) Bacterial pneumonia
b) Viral pneumonia
c) Diaphragmatic hernia
d) Cyanotic heart disease
e) Carbon monoxide poisoning

763. The following statement is not true about pulse oximetry:
a) It measures partial pressure of oxygen
b) Accuracy depends upon the adequate tissue perfusions
c) Abnormal hemoglobin and nail polish can affect results
d) Pulse oximetry is not very sensitive in detecting a mildly low $Po_2$
e) Pulse oximetry is not adequate to eliminate hypoxia as a cause of respiratory alkalosis

764. The treatment during an acute episode of psychogenic hyperventilation is:
a) Tell the patient to stop
b) Endotracheal intubation
c) Offer a gift if he/she stops
d) Rebreathing into a plastic bag
e) Rebreathing into a paper bag

765. Initial therapy in patients with hyperventilation due to anxiety is:
a) Reassurance
b) Scolding
c) Morphine
d) Naloxone
e) Phenobarbital

766. A patient is receiving adequate calories through a maintenance intravenous fluids containing glucose and electrolytes. The patient is NPO (nothing by mouth). The most likely outcome is:
a) The patient will gain 0.5% of weight each day.
b) The patient will gain 1% of weight each day.
c) The patient will maintain the same weight.
d) The patient will lose 0.5-1% of weight each day.
e) The patient will lose 2-4% of weight each day.

767. A child has RTA (renal tubular acidosis). She must receive the following component during maintenance fluid therapy:
a) Calcium
b) Potassium
c) Phosphorous
d) Protein
e) Bicarbonate

768. The patient needs high fluid intake in the following condition:
a) Bronchial asthma
b) Sickle cell crisis
c) Before surgery

d) During surgery
e) After surgery

769. Maintenance fluids are usually composed of all of the following components **except**:
a) Protein
b) Glucose
c) Sodium
d) Potassium
e) Water

770. Goals of maintenance fluids are all of the following **except**:
a) Prevent dehydration
b) Prevent vitamins and minerals deficiencies
c) Prevent electrolyte disorders
d) Prevent ketoacidosis
e) Prevent protein degradation

771. The glucose in maintenance fluids usually provides:
a) 10% of the normal caloric needs
b) 15% of the normal caloric needs
c) 20% of the normal caloric needs
d) 25% of the normal caloric needs
e) 30% of the normal caloric needs

772. Preferred fluid for an acute correction of intravascular volume depletion is:
a) ¼ normal saline
b) ½ normal saline
c) D5 and ½ normal saline
d) D5 and ¼ normal saline
e) Normal saline or Ringer lactate

773. Preferred maintenance fluid therapy is:
a) Ringer lactate
b) D5 and ½ normal saline
c) ¼ normal saline
d) D5 and 1/8 normal saline
e) D5 and 3% saline

774. Preferred maintenance fluid therapy in children **less than 25 kg** with a normal renal function is:
a) D5 and ¼ normal saline + 20 mEq/L Kcl
b) D5 and ½ normal saline + 20 mEq/L Kcl
c) ¼ normal saline only
d) ½ normal saline only
e) Normal saline + 20 mEq/L Kcl

775. Preferred maintenance fluid therapy in children **more than 25 kg** with a normal renal function is:
a) D5 and ½ normal saline plus 20 mEq/L Kcl
b) D5 and ½ normal saline plus 10 mEq/L Kcl
c) D5 and ¼ normal saline plus 10 mEq/L Kcl
d) Normal saline plus 20 mEq/L Kcl
e) D5 and 3% sodium chloride

776. All of the following conditions have increased fluid requirements **except**:
a) Premature infants under radiant warmers
b) Premature infants under phototherapy
c) A persistent fever

- d) A patient is on mechanical ventilator
- e) A persistent tachypnea

**Match the following conditions (777-778):**

777. Diarrhea
778. Emesis or losses from a nasogastric tube
    - a) Metabolic acidosis
    - b) Metabolic alkalosis
    - c) Respiratory acidosis
    - d) Respiratory alkalosis

779. Emesis causes hypokalemia that is predominantly due to the following condition:
    - a) Gastric losses of potassium
    - b) Increased urinary losses of potassium
    - c) Gastric losses of sodium
    - d) Gastric losses of chloride
    - e) Gastric losses of Hcl

780. A child develops third space fluid losses after intestinal surgery. Third space fluid losses are due to the following condition:
    - a) Fluid moves from interstitial space to intravascular space
    - b) Fluid moves from intravascular space to the lymphatics
    - c) Fluid moves from lymphatics to intravascular space
    - d) Fluid moves from intra-arterial space to intravascular pace
    - e) Fluid moves from intravascular space to interstitial space

781. Preferred therapy in patients with a third space fluid loss is:
    - a) ¼ normal saline
    - b) ½ normal saline
    - c) Normal saline
    - d) 1.5% normal saline
    - e) 3% normal saline

782. A child has a large amount of fluid loss through the chest tube. Preferred fluid therapy to replace this fluid loss is:
    - a) Intralipid
    - b) TPN
    - c) ¼ normal saline
    - d) ½ normal saline
    - e) Normal saline

783. Most common cause of renal insufficiency in children with volume depletion is:
    - a) Renal artery thrombosis
    - b) Renal vein thrombosis
    - c) Cardiac failure
    - d) Nephrotic syndrome
    - e) Acute tubular necrosis

784. A child has severe dehydration and subsequently develops hematuria. CBC reveals thrombocytopenia. Most likely sequelae of severe dehydration in this patient is:
    - a) Hypertension
    - b) Nephrotic syndrome
    - c) Glomerulonephritis
    - d) Renal vein thrombosis
    - e) Renal artery thrombosis

785. A child is diagnosed with an acute and severe dehydration. However, the serum creatinine level is mildly elevated. The most likely interpretation is:
   a) The child does not have an acute dehydration
   b) The child does not have severe dehydration
   c) The child has a chronic dehydration
   d) The child is normal and is misdiagnosed
   e) The child has an acute and severe dehydration

786. The urinalysis reveals a specific gravity 1.025, hyaline casts, granular casts, a few WBCs, a few RBCs, and 30-100 mg/dL of proteinuria. Most likely diagnosis is:
   a) No dehydration
   b) Moderate to severe dehydration
   c) Mild dehydration
   d) Nephrotic syndrome
   e) UTI

787. A child has severe dehydration. CBC reveals a lower limit of normal hemoglobin for his age. Most likely interpretation is:
   a) The child has no dehydration
   b) The child has mild dehydration
   c) The child has moderate dehydration
   d) The child has polycythemia
   e) The child has anemia

788. A child with severe dehydration has a low serum albumin level. All of the following conditions can manifest like that **except**:
   a) Malnutrition
   b) Nephrotic syndrome
   c) Liver disease
   d) Protein losing enteropathy
   e) Dehydration with hemoconcentration

789. All of the following physical findings are signs of dehydration **except**:
   a) Tachycardia
   b) Sunken eyes
   c) Tachypnea
   d) Diaphoresis
   e) Bradycardia

790. The following condition presents with dehydration but good urine output is:
   a) Isonatremic dehydration
   b) Emesis
   c) Diarrhea
   d) Pyloric stenosis
   e) Salt wasting nephropathy

791. A child is being treated for dehydration. A successful therapy indicates:
   a) Pulmonary congestion
   b) Puffy face
   c) Weight gain
   d) Hypertension
   e) Bradycardia

792. A child is receiving intravenous hydration therapy. Her serum sodium level was 135 day before yesterday. Yesterday, sodium level was 140. Today's serum sodium level is 145. She is receiving D5 and ½ normal saline. The appropriate next step should be the following therapy:
a) Furosemide
b) Mannitol
c) Normal saline
d) Ringer lactate
e) Stop the maintenance sodium

793. Preferred therapy in patients with metabolic acidosis and renal insufficiency or renal tubular acidosis is:
a) Sodium chloride therapy should be increased
b) Add sodium bicarbonate without reducing the amount of sodium chloride
c) Add sodium acetate without reducing the amount of sodium chloride
d) Add both sodium bicarbonate and sodium acetate along with sodium chloride
e) Sodium chloride is replaced by sodium bicarbonate or sodium acetate

794. A child has hyponatremic dehydration. His serum sodium level is 125. He is receiving sodium deficit therapy. After 24 hours, his serum sodium level becomes 140. Most likely complication is:
a) Subdural hemorrhage
b) Subarachnoid hemorrhage
c) Hypernatremia
d) Central pontine myelinolysis
e) Intracerebral hemorrhage

795. A child's serum sodium level is 123. The target to bring the sodium level is 135. His weight is 15 kg. The amount of sodium deficit is:
a) 88
b) 98
c) 108
d) 118
e) 128

796. A child developed seizures due to hyponatremia. Her serum sodium level is 110. Preferred therapy is:
a) Normal saline
b) Ringer lactate
c) D5 and ½ normal saline
d) 3% sodium chloride
e) D5 and ½ normal saline plus Kcl 20 mEq/L

797. All of the following management are true about isonatremic dehydration **except**:
a) First, normal saline (20 mL/kg over 20 minutes) is given to restore intravascular volume.
b) Entire fluid therapy should be completed over 48 hours.
c) D5 and 1/2 normal saline with 20 mEq/L Kcl are useful therapy
d) D5 and ¼ normal saline with 20 mE/L Kcl are used in children less than 10-20 kg.
e) Children with mild dehydration do not need intravenous therapy.

798. A child who is clinically stable is suspected to have hyponatremic dehydration. The serum sodium level is pending in laboratory. The initial therapy should be:
a) Normal saline
b) 1.5% sodium chloride
c) 3% sodium chloride
d) D5 and ½ normal saline
e) D5 and ¼ normal saline

799. In hypernatremic dehydration, brain hemorrhage and thrombosis can occur. These manifestations are most likely due to the following condition:

a) Movement of water from the extracellular fluid into the brain cells
b) Movement of sodium from the brain cells into the extracellular fluid
c) Movement of potassium from the brain cells into the extracellular fluid
d) Movement of sodium from the extracellular fluid into the brain cells
e) Movement of water from the brain cells into the extracellular fluid

800. The clinical manifestations of hypernatremic dehydration include all of the following conditions **except**:
a) Fever
b) Hyperreflexia
c) Irritability and lethargy
d) Hypertonicity
e) Appears more ill than children with a isonatremic dehydration of similar degree.

801. A child is being treated for hypernatremic dehydration. She was stable without any distress. Suddenly, she stopped breathing and required endotracheal intubation. Physical examination reveals bilateral fixed and dilated pupils. Most likely diagnosis is:
a) Acute hyponatremia
b) Hypertensive encephalopathy
c) Acute cerebral atrophy
d) Hypernatremic encephalopathy
e) Brain herniation due to cerebral edema

802. A rapid correction of hypernatremic dehydration may cause seizures, brain herniation, and death. The underlying pathogenesis is the following:
a) Increased idiogenic osmoles within the brain cells
b) Increased sodium levels within the brain cells
c) Decreased sodium levels within the brain cells
d) Idiogenic osmoles within the brain cells are decreased.
e) Increased potassium levels within the brain cells

803. The severe hypernatremic dehydration may need to correct over:
a) 8 hours
b) 12 hours
c) 24 hours
d) 2- 4 days
e) 4-7 days

**Match the following conditions and therapies (804-808):**

804. A neonate with hypernatremia
805. A 3-year-old child with hypernatremia
806. Hypernatremia due to diabetes insipidus
807. Loss of sodium and water due to diarrhea
808. A child with severe hypernatremia and his serum sodium is difficult to control.
a) D5 and ¼ normal saline plus Kcl 20 mEq/L
b) D5 and ½ normal saline plus Kcl 20 mEq/L
c) D5 and a lower sodium concentration than ¼ normal saline plus Kcl 20 mEq/L
d) D5 and a higher sodium concentration than ½ normal saline plus Kcl 20 mEq/L
e) Two intravenous solutions (e.g., D5 and ½ normal saline, D5 ¼ normal saline) plus Kcl 20 mEq/L should be started at the same time in two different intravenous sites.

809. Preferred therapy in patients who develop seizures and cerebral edema during rapid correction of severe hypernatremia is:
a) 1.5% sodium chloride
b) 3% sodium chloride
c) Normal saline

d) ½ normal saline
e) ¼ normal saline

810. A child develops mild to moderate dehydration secondary to diarrhea and mild vomiting. Preferred therapy is:
a) Normal saline
b) Ringer lactate
c) ½ normal saline
d) ¼ normal saline
e) Oral rehydration

811. Indications for intravenous hydration include all of the following **except**:
a) Uncontrolled vomiting
b) Stupor
c) Abdominal distension
d) Extreme fatigue
e) Epigastric discomfort

812. The maintenance oral rehydration therapy at home in patients with diarrhea includes all of the following **except**:
a) Breast feeding should be stopped.
b) Supplement water intake should be maintained.
c) ORS (oral rehydration solution) 100 mL/kg/day is given.
d) The volume of ORS ingested should be equal to volume loss.
e) 10-15 mL/kg/hour ORS is adequate, if the stool volume cannot be measured.

813. All of the following statements are true about preoperative fluid management in children **except**:
a) Deficits of water and electrolytes should be corrected before surgery.
b) Young infants who are not vomiting should receive carbohydrate and electrolyte mixtures by mouth until 6 hours before surgery.
c) Hypoprothrombinemia should be corrected by 1 mg of vitamin K administration.
d) In intestinal obstruction, conjugated bilirubin becomes deglucuronitated by intestinal enzymes, high levels of unconjugated bilirubin in the serum from enterohepatic circulation can produce kernicterus.
e) Patients without existing fluid, protein, and electrolyte deficits should receive maintenance carbohydrate, water and electrolytes but no protein.

814. A child is constantly vomiting due to an upper intestinal obstruction. His condition is progressively deteriorating. His serum electrolytes are as follows:
Na 130, K 3.5, BUN 12 and creatinine 0.7
Preferred management is:
a) Give more sodium before surgery and repeat another serum electrolytes before surgery.
b) Repeat another abdominal x-ray after 6 hours
c) Check stools for occult blood
d) Monitor abdominal girth every 2 hours
e) Perform surgical procedure and give extra sodium in the intravenous fluid.

815. Postoperative fluid amount and duration of restriction are usually as follows:
a) 85 mL/100 kcal metabolized, 6 hours restriction after surgery
b) 100 mL/120 kcal metabolized, 12 hours restriction after surgery
c) 120 mL/150 kcal metabolized, 18 hours restriction after surgery
d) 85 mL/100 kcal metabolized, 24 hours restriction after surgery
e) 65 mL/80 kcal metabolized, 12 hours restriction after surgery

816. Fluid is restricted after surgery due to antidiuresis that occurs because of all the following conditions **except**:
a) Narcotic used for pain
b) Surgical trauma
c) General anesthesia
d) Renal failure

e) Circulatory readjustment

817. Postoperative fluid therapy should **not** be restricted in all of the following conditions **except**:
a) Posterior urethral valve
b) Chronic pyelonephritis
c) Malrotation of the intestine
d) Bilateral UPJ obstruction
e) Sickle cell disease

818. Most common cause of acute infectious illness in febrile children younger than 3 years of age is:
a) Pneumonia
b) Aseptic meningitis
c) Bacteremia
d) Focal soft tissue infection
e) Bacterial meningitis

819. A physician is examining a very sick child in the ER. Most important observational data is the following:
a) Father has AIDS and looks sick
b) Mother has high fever and coughing constantly
c) Parents anxiety due to child's illness
d) Nurse looks worried about the patient.
e) Child's response to stimuli

820. Acute illness observational scale used in well and sick children for their clinical evaluation includes all of the following conditions **except**:
a) Quality of cry
b) Color
c) Hydration
d) State variation
e) Parent's reaction to child's stimulation

**Match the following findings and diagnosis (821-825):**

821. Paradoxic irritability
822. "Slapped-cheek" appearance
823. Hand-foot-and-mouth disease
824. Tenderness at the spine
825. Tenderness at the costovertebral angle
a) Diskitis
b) Coxsackieviruses
c) Parvovirus
d) Pyelonephritis
e) Meningitis

826. A 10-month-old boy appears with fever. Physical examination is unremarkable. The next step in managing this patient is:
a) Spinal tap
b) Urine culture
c) Blood smear
d) Chest x-ray
e) Antibiotic therapy

827. The diagnosis of UTI is confirmed by the following finding:
a) Bacteria is noted in Gram stain on an unspun urine specimen.
b) Presence of leukocyte esterase in the urine.
c) Presence of more than 5 WBCs per high-power field on an unspun urine specimen.

d) A total WBC count is more than 15,000.
e) Urine culture reveals E. coli.

828. All of the following findings are indicators of increased risk of occult bacteremia caused by Streptococcus pneumoniae except:
a) Sick looking child
b) High grades of fever
c) WBC counts 17,000
d) 3-36 months of age
e) Absolute neutrophil counts 5,000

829. A 4-month-old healthy child appears with fever but no other symptoms. Physical examination is normal. He is immunized and has no risk factors. The next step in management is:
a) Urine culture
b) Spinal tap
c) Chest x-ray
d) Blood culture
e) Follow up in the next day

830. A 2-month-old child appears with fever. The child is active, alert, and feeding well. Physical examination is unremarkable. Urinalysis result is normal. Chest x-ray result is normal. CBC result is unremarkable. Past medical history is unremarkable. Mother takes care of the child at home. The physician has been seeing this child since birth. The next step in management is:
a) Perform sepsis work up and admit the child to the floor.
b) Start prophylactic antibiotics therapy
c) Perform spinal tap to rule out an early onset meningitis
d) Perform urine culture to rule out UTI because routine urinalysis is unreliable
e) Follow up the patient in the office or by telephone

831. Most common cause of all unintentional deaths in children younger than 1 year of age is:
a) Suffocation
b) Drowning
c) Falls
d) Poisoning
e) Fire and burn

832. Most common method of teenage suicide is:
a) Firearms
b) Jump from the top of the building
c) Run over by cars voluntarily
d) Ingestion of illicit drugs
e) Carbon monoxide poisoning inside the car that was kept on for a long time with a full gas tank

833. All of the following statements are true about principles of injury control **except**:
a) Most have accepted the theory of the "accident-prone child".
b) Children at high injury risk are poorly supervised.
c) Children at high injury risk belong to disorganized or stressed family.
d) Children at high injury risk live in hazardous environments.
e) It is more appropriate to examine the physical and social environment of children at high injury risk.

834. All of the following efforts to control injuries are important **except**:
a) Education
b) Change in product design
c) Child should be restrained
d) Modification of physical environment
e) Modification of social environment

835. A mother complains that her 3-year-old boy is very restless and is being injured all the time. All of the following statements by the physician to the parents help to control injuries in children **except**:
   a) Bicycle helmets should be used
   b) Child car seat should be used
   c) Smoke detectors should be installed
   d) Tap water temperature should be checked
   e) Supervise the child closely

836. Most useful injury prevention strategy is the following condition:
   a) Cabinet locks
   b) Roadway design
   c) Smoke detectors
   d) School safety programs
   e) Airbags

837. Most common place in drowning is:
   a) Sea
   b) Ocean
   c) Pond
   d) Residential pool
   e) Bathtub

838. Most effective way to prevent childhood pool drowning is:
   a) “Water babies”
   b) Swimming instructions
   c) Personal floatation device
   d) More adult supervision
   e) Circumferential fencing

839. Children start to understand the consequences of falling into deep water at:
   a) 3 years of age
   b) 4 years of age
   c) 5 years of age
   d) 6 years of age
   e) 7 years of age

840. Most common cause of drowning in adolescents and adults is:
   a) Alcohol
   b) Drugs
   c) Seizures
   d) Head trauma
   e) Fighting inside the pool

841. A seizure patient can be drowned in all of the following areas **except**:
   a) Ocean
   b) Sea
   c) Ponds
   d) Bathtub
   e) Shower

842. All of the following statements are true about firearm injuries **except**:
   a) In homes with guns, the risk to the intruders is much greater than the occupants.
   b) Home ownership of guns increases the risk of adolescent suicide 10-fold and adolescent homicide 4-fold.
   c) Handguns are used in 90% of criminal and other firearm misuse but handguns account for approximately 20% of the firearm in use.

d) Handguns are available to adolescents who are not been involved in criminal or gang activities.
e) Most appropriate way to prevent shooting injuries in children and adolescents by stricter regulation of handgun access to them, rather than all firearms.

843. In an emergency, first responder is:
a) Physician
b) Paramedic
c) Nurse
d) Emergency medical technician (EMT)
e) Law enforcement officer

844. A newborn's physical examination reveals a long face, wide upturned nose, high prominent forehead, thick everted lower lip, low set ears, microretrognathia, high arched palate, osteoarticular abnormalities, and moderate mental retardation. Most likely diagnosis is:
a) Trisomy 8
b) Trisomy 13
c) Trisomy 16
d) Trisomy 18
e) Trisomy 21

845. Most common anatomical cause of obstructive sleep apnea and hypoventilation (OSA/H) in children is:
a) Enlarged tongue
b) Anterior nasal stenosis
c) Micrognathia
d) Midface hypoplasia
e) Adenotonsillar hypertrophy

846. Most common functional process contributing to obstructive sleep apnea and hypoventilation (OSA/H) is:
a) Rapid eye movement sleep
b) Generalized hypotonia
c) Birth asphyxia
d) Cerebral palsy
e) Narcotics

847. Risk factors for obstructive sleep apnea and hypoventilation are all of the following **except**:
a) Obesity
b) Chronic rhinitis
c) Asthma
d) White race
e) Positive family history

848. Chronic hypoxia that develops due to obstructive sleep apnea and hypoventilation (OSA/H) resulting in all of the following conditions **except**:
a) Growth failure
b) Polycythemia
c) Arrythmias
d) Death
e) Left ventricular failure

849. Most common symptom in patients with obstructive sleep apnea and hypoventilation is:
a) Habitual snoring
b) Chronic mouth breathing
c) Restlessness during sleep
d) Frequent awakenings during sleep
e) Abnormal position during sleep

850. A patient with Down syndrome develops pulmonary hypertension and right ventricular failure. He has a history of habitual snoring. Physical examination reveals obesity and pectus excavatum deformities. EKG reveals a right ventricular hypertrophy. Most likely diagnosis is:
   a) Large VSD
   b) Hypoplastic lungs
   c) Pleural effusion
   d) Endocardial cushion defect
   e) Obstructive sleep apnea / hypoventilation

851. Preferred diagnostic study in patients with obstructive sleep apnea / hypoventilation is:
   a) Arterial blood gas
   b) Lateral x-ray of the neck
   c) Audio / video taping during sleep
   d) Home polysomnography
   e) An overnight recording of multiple physiologic sensors during sleep

852. The following findings may be noted in patients with obstructive sleep apnea and hypoventilation **except**:
   a) Anemia
   b) Right ventricular hypertrophy
   c) Dysfunction in echocardiography
   d) Respiratory acidosis with a metabolic alkalosis
   e) Enlarged adenoid in the lateral x-ray of the neck

853. Most severe complication of obstructive sleep apnea and hypoventilation is:
   a) Pulmonary hypertension
   b) Daytime somnolence
   c) Decreased memory
   d) Decreased cognitive function
   e) Increased behavioral problems

854. Preferred therapy in patients with obstructive sleep apnea and hypoventilation (OSA/H) is:
   a) Adenotonsillectomy in patients with a normal adenoid and tonsils
   b) Nasal CPAP (continuous positive airway pressure)
   c) Nasal steroids
   d) Medroxyprogesterone acetate
   e) Depends on the underlying abnormalities

855. The adverse effect of medroxyprogesterone acetate when used in female patients with OSA/H is:
   a) Amenorrhea
   b) Dysmenorrhea
   c) Premenstrual syndrome
   d) Pubertal development
   e) Abnormal uterine bleeding

856. A complete resolution of symptoms may not occur after adenotonsillectomy in all of the following conditions **except**:
   a) Down syndrome
   b) Extreme obesity
   c) Cerebral palsy
   d) Arnold chiari malformation
   e) Onset of symptoms after 2 years of age

857. A child appears with a rapid enlargement of the right tonsil. He also has fever, weight loss, and ipsilateral lymphadenopathy. Physical examination reveals a normal left tonsil and an abnormal right tonsil. Most likely diagnosis is:
   a) Acute tonsillitis

b) Chronic tonsillitis
c) Peritonsillar abscess
d) Tonsillar abscess
e) Lymphoma

858. Major virulence factor of group A beta-hemolytic Streptococci (GABHS) is:
a) M protein
b) N protein
c) A protein
d) B protein
e) C protein

859. The only accurate method to diagnose sinusitis is:
a) CT scan of the sinuses
b) Plain x-ray of the sinuses
c) History and physical examination
d) Transillumination of the sinuses
e) Sinus aspirate culture

860. Major adverse effect of antihistamine use is:
a) Urticaria
b) Sedation
c) Itchyness
d) Hyperactivity
e) Irritability

861. First-generation antihistamines reduces rhinorrhea. The effect is due to the following action:
a) CNC stimulation
b) CNS depression
c) Cholinergic properties
d) Anticholinergic properties
e) Antihistaminic properties

862. Ipratropium bromide (a topical anticholinergic agent) reduces rhinorrhea. The most common side effects are:
a) Perforation of the nasal septum
b) Secondary bacterial infections
c) Atrophy of the nasal turbinates
d) CSF rhinorrhea
e) Nasal irritation and bleeding

863. A child has virus-induced reactive airway disease. She has been coughing for the last 2 weeks. Most effective therapy is:
a) Vitamin C
b) Bronchodilator
c) Guaifenesin
d) Codeine
e) Dextromethorphan hydrobromide

864. Most common site of bleeding from the nose is:
a) Nasopharynx
b) Fractured nasal bone
c) Floor of the nose
d) Nasal sinuses
e) Kieselbach plexus

865. Most common cause of nose bleed from anterior septum is:
a) Digital trauma

- b) Sinusitis
- c) Foreign bodies
- d) Dry air
- e) URI

866. The initial treatment in patients with nose bleed is:
    - a) Cold compress on the nose
    - b) Oxymetazoline drops
    - c) Neo-Synephrine drops
    - d) Anterior nasal packing
    - e) The nares should be compressed, an upright position, and head tilted forward

867. A child has nose bleeds during the winter months. He lives in an apartment building. There is plenty of heat supply in the apartment. The preferred preventive measure to avoid nose bleeds in this patient is:
    - a) Cold compress on the nose
    - b) Neo-Synephrine drops
    - c) Oxymetazoline drops
    - d) A room humidifier
    - e) Prophylactic anterior nasal packing

868. A child appears with mouth breathing and hyponasal speech. Physical examination reveals widen bridge of the nose, eroded adjacent bony structures, fleshy, glistening, gray, grapelike masses noted between the nasal turbinates and the septum. Most likely diagnosis is:
    - a) Syphilis
    - b) Ethmoidal polyps
    - c) Sphenoidal polyps
    - d) Frontal encephalocele
    - e) Juvenile nasopharyngeal angiofibroma

869. A child appears in the ER with unilateral nasal discharge. Physical examination reveals a small piece of crayon and mildly swollen surrounding tissue. Preferred therapy is:
    - a) Keep the foreign body but start antibiotic therapy to prevent an infection
    - b) Remove the foreign body under general anesthesia
    - c) Topical steroid therapy is to reduce the swelling
    - d) Topical Neo-Synephrine drops
    - e) Remove the foreign body by forcep or nasal suction under local anesthesia

870. Most common congenital anomaly of the nose is:
    - a) Choanal atresia
    - b) Hypoplastic nose
    - c) Single nasal cavity
    - d) Upturned nose
    - e) Long nose

871. A newborn appears cyanotic at birth. She becomes pink when crying and again becomes cyanotic when stops crying. Most likely diagnosis is:
    - a) Choanal stenosis
    - b) Mother received morphine
    - c) Perinatal asphyxia
    - d) Subarachnoid bleeding
    - e) Bilateral choanal atresia

872. Internal nasal airway doubles in size by:
    - a) 3 months of age
    - b) 6 months of age

c) 9 months of age
d) 1 year of age
e) 2 years of age

873. Acute bacterial sinusitis occurs after the following condition:
a) Acute otitis media
b) Chronic otitis media
c) Periorbital cellulitis
d) Orbital cellulitis
e) Viral upper respiratory tract infection

**Match the following complications of acute bacterial sinusitis and their clinical manifestations (874-878):**

874. Meningitis
875. Pot puffy tumor
876. Mucoceles
877. Periorbital cellulitis
878. Orbital cellulitis
a) Chronic inflammatory lesions in the frontal sinus that can expand and displaced the eye causing diplopia.
b) Osteomyelitis of the frontal bone
c) Erythema and swelling of the tissues surrounding the globe
d) Proptosis, chemosis, double vision, impaired extraocular movements, and eye pain
e) Headache, vomiting, nuchal rigidity, and altered mental status

879. All of the following statements are true about the treatment in patients with an acute sinusitis **except**:
a) Antibiotic therapy has substantial benefit in clinically diagnosed acute bacterial sinusitis.
b) In uncomplicated cases, initial therapy is amoxicillin (45 mg/kg/day) for an acute bacterial sinusitis.
c) Penicillin-allergic patients should receive cefuroxime axetil, cefpodoxime, clarithromycin, or azithromycin.
d) A "high-dose" amoxicillin-clavulanate (80-90 mg/kg/day of **amoxicillin and 6.4 mg/kg/day of clavulanate**) should be given in patients who are at high risk (e.g., younger than 2 years of age, daycare attendance, received antibiotic in the last 1-3 months).
e) Unresponsive patients should be referred to an ENT specialist for further evaluation and maxillary sinus aspiration and culture.

880. The preferred method of prevention in sinusitis is:
a) Frequent hand washing
b) Influenza vaccine
c) Oseltamivir
d) Zanamivir
e) Use face mask

881. A pregnant mother's VDRL titer is 1: 2. Her FTA-ABS (fluorescent treponemal antibody absorption test) is negative. Mother was not treated for syphilis. The newborn should receive:
a) No therapy
b) Intramuscular procaine penicillin G (50,000 U/kg daily in a single dose) for 10-14 days
c) Intravenous aqueous crystalline penicillin G (100,000-150,000 U/kg/day, given as 50,000 U/kg/ every 12 hours for the first 7 days and every 8 hours thereafter) for 10-14 days
d) Intramuscular benazthine pencillin G (50,000 U/kg in a single dose)
e) Intravenous aqueous crystalline penicillin G (200,000-300,000 U/kg everyday, divided every 4-6 hours) for 10-14 days

882. A mother's VDRL titer is 1: 4. She received 3 doses of benzathine penicillin G (2.4 million U intramuscularly, in each dose) one week apart. The duration of syphilis is unknown. She received 3 doses on Oct/1, Oct/8, and Oct/15 during the third trimester. The infant was born on Nov/13. The preferred management is:
a) The infant should not be treated.

b) The infant's treatment depends upon the long bones x-ray findings.
c) The infant's VDRL test should be performed. The decision of treatment depends upon the baby's titer.
d) The infant's CSF VDRL test result will help to make the decision about the therapy.
e) The infant should be treated with penicillin.

883. A mother's VDRL titer was 1:8 and FTA-ABS was positive. The infant should be treated in all of the following conditions **except**:
a) Symptomatic infant with syphilis
b) Maternal treatment was undocumented, unknown, or inadequate
c) Maternal VDRL titer at the time of delivery is 1:1
d) Mother received erythromycin therapy
e) Mother's treatment was completed within 28 days from the date of delivery

884. The Centers for Disease Control and Prevention (CDC) recommends that infant should be treated for syphilis in all of the following conditions **except**:
a) Born to mother who received oral penicillin therapy
b) Maternal relapse or reinfection
c) Longbone x-ray reveals periosteitis and osteochondritis
d) The infant has a reactive CSF VDRL.
e) Infant's VDRL titer is 1:4 and the mother's VDRL titer is 1:2.

885. The following clinical finding is a **characteristic** of early manifestation of congenital syphilis:
a) Hepatosplenomegaly
b) Jaundice
c) Lymphadenopathy
d) Snuffles
e) Chorioretinitis

886. All of the following are laboratory and radiological findings in early manifestations of congenital syphilis **except**:
a) Cholestatic jaundice
b) Thrombocytopenia
c) Elevated liver enzymes
d) Coombs positive hemolytic anemia
e) Osteochondritis and periostitis

887. Preferred approach to prevent Lyme disease is:
a) Insect repellents
b) Doxycycline
c) Routine testing of ticks
d) Lyme vaccine
e) To wear appropriate protective clothing in tick infested areas

888. The following statement is true about Lyme disease:
a) Lyme disease is difficult to treat.
b) Chronic symptoms and clinical recurrences are common.
c) Lyme disease requires prolonged intravenous therapy.
d) Prognosis for children is bad.
e) The most common reason for treatment failure is misdiagnosis in patients who do not have a Lyme disease.

889. Preferred serologic test for patients with Lyme disease is:
a) Specific IgM antibodies
b) Specific IgG antibodies
c) Western blotting (i.e., immunoblotting)
d) Widely used commercial kits for serologic testing

e) A quantitative ELISA (enzyme-linked immunosorbent assays) and a confirmatory western immunoblotting if the ELISA result is either positive or equivocal.

890. The diagnostic test in patients with Lyme disease is:
a) Culture and isolation of the B. burgdorferi
b) Silver stain (Warthin-Starry or modified Dieterle)
c) Immunohistochemical stain using monoclonal or polyclonal antibodies
d) ELISA
e) Western immunoblotting

891. Most common site of arthritis in patients with Lyme disease is:
a) Wrist
b) Elbow
c) Ankle
d) Knee
e) Hip

892. The usual finding in the joint fluid in patients with Lyme arthritis is:
a) WBC counts 500-1,000/mL with a predominance of polymorphonuclear cells.
b) WBC counts 1,000-5,000/mL with a predominance of lymphocytes
c) WBC counts 5,000-10,000/mL with a predominance of monocytes
d) WBC counts 10,000-25,000/mL with a predominance of eosinophills
e) WBC counts 25,000-125,000/mL with a predominance of polymorphonuclear cells

893. CSF findings in patients with Lyme disease may include all of the following **except**:
a) Elevated protein
b) Elevated WBC counts
c) Elevated polymorphs
d) Elevated lymphocytes
e) Normal glucose

894. A 9-year-old child is beaten by a tick. His father removed the tick immediately. The preferred management is:
a) Start amoxicillin
b) Start doxycycline
c) ELISA testing
d) Send the tick for testing
e) Reassurance and observation

895. Early disseminated Lyme disease is due to the spread of spirochetes (B. burgdorferi) from the skin through:
a) Lymphatics
b) Blood
c) Nerves
d) Muscles
e) Subcutaneous tissues

896. A mother wants to hold the baby after the delivery. The infant was born by NSVD with Apgar scores 9 and 9 of 1 and 5 minutes respectively. The umbilical cord was not clamped. The mother was holding the baby for about 5 minutes. Most likely the infant will develop:
a) Polychtemia
b) Anemia
c) Jaundice
d) Hypoglycemia
e) Respiratory distress

897. A child appears with fever, hypotension, and increased capillary filling time (more than 3.5 seconds). Most likely diagnosis is:

a) Compensated septic shock
b) Uncompensated septic shock
c) Compensated hypovolemic shock
d) Compensated cardiogenic shock
e) Uncompensated hypovolemic shock

898. A child appears with fever, warm extremities (from peripheral vasodilatation secondary to low systemic vascular resistance), bounding peripheral pulses and tachycardia (from high stroke volume and widened pulse pressure between systolic and diastolic), tachypnea, good urine output, and mild metabolic acidosis. Most likely diagnosis is:
a) Uncompensated septic shock
b) Uncompensated hypovolemic shock
c) Uncompensated cardiogenic shock
d) Compensated septic shock
e) Compensated cardiogenic shock

899. A 2-year-old child appears with moderate dehydration due to vomiting and diarrhea. Vomiting stops 6 hours ago. The preferred therapy is:
a) Intravenous normal saline
b) Ringer lactate
c) D5 and ½ normal saline
d) 3% sodium chloride
e) Oral dehydration

900. A 5-year-old girl appears with fever and pneumonia. CBC reveals anemia, leukopenia, and neutropenia. Laboratory test reveals decreased CD4 count and hypergammaglobulinemia. Most likely diagnosis is:
a) AIDS (acquired immunodeficiency syndrome)
b) Chronic granulomatous disease
c) Toxic shock syndrome
d) Active tuberculosis
e) Glycogen storage disease

901. The primary route of HIV-1 infection occurs in pediatric population is:
a) Sexual transmission
b) Blood transfusions
c) Vertical transmission
d) Saliva
e) Platelet transfusions

902. The additional risk of transmission of HIV-1 infection to infants through breast-feeding when mother was infected with HIV:
a) Before pregnancy
b) During pregnancy
c) After delivery
d) At the time of delivery
e) At the time of conception

903. Preferred method to prevent vertical transmission from mothers to newborns is:
a) Cesarean section
b) Avoid rupturing membrane
c) Avoid preterm delivery
d) Premature delivery by cesarean section
e) Highly active antiretrovial therapy (HAART)

904. The majority of HIV-infected children acquire the virus from mothers during:
a) Intrapartum
b) Immediately after birth

c) 1-2 days after birth
d) 2-7 days after birth
e) 7-28 days after birth

905. The most common mechanism of intrapartum transmission of HIV to children is:
a) Exposure to the infected blood and cervicovaginal secretions in the birth canal
b) Blood
c) Lymphatics
d) Amniotic fluid
e) Placentia

906. The following statement is true about twins and HIV infections:
a) Twin A is more likely to be infected because twin A is larger than thin B.
b) Twin A is more likely to be infected because twin A is smaller than twin B.
c) Twin B is more likely to be infected because twin B is difficult to deliver.
d) Twin A is more likely to be infected because twin A is exposed to the birth canal longer than twin B.
e) Twin A is less likely to be infected because twin A is exposed to the birth canal shorter than twin B.

907. Pathogenesis of HIV infection when mucosa is the portal of entry is:
a) Mucosa to lymphatics to lymph nodes to blood
b) Mucosa to blood to lymphatics to lymph nodes
c) Muscosa to lymph nodes to lymphatics to blood
d) Mucosa to blood to nerve to lymphatics to lymph nodes
e) Mucosa to lymphatics to blood to nerve to lymph nodes

908. The most common clinical manifestation of HIV infection at birth is:
a) Lympadenopathy
b) Diarrhea
c) Oral thrush
d) Hepatosplenomegaly
e) Asymptomatic

909. A 9-month-old HIV infected child appears with lymphadenopathy, hepatosplenomegaly, dermitis, and parotitis. The mother denies past history of pneumonias and recurrent bacterial infections. He had history of an oral thrush that lasted for 3 weeks. He had history of fever that lasted for 10 days. He has no fever now. Most likely the child belongs to clinical category:
a) Category A
b) Category B
c) Category C
d) Category N
e) Category EN

910. A child developed cryptococcosis. Most likely the child has:
a) Malnutrition
b) Malignancy
c) No serious underlying pathology
d) Chronic granulomatous disease
e) AIDS

911. A child appears with fever, weight loss, diarrhea, abdominal pain, and night sweats. He is recently diagnosed with AIDS. The diagnosis of disseminated MAC (Mycobacterium avium-intracellular complex) can be confirmed by all of the following tests **except**:
a) Presence of MAC in stools
b) Presence of MAC in blood
c) Presence of MAC in bone marrow
d) Presence of MAC in liver

e) Presence of MAC in lymph nodes

912. Preferred therapies in HIV-infected children with atypical mycobacterial infection (e.g., MAC) are:
a) Clarithromycin, ethambutol, and rifabutin
b) Clarithromycin, azithromycin, and rifampin
c) Ethambutol, rifabutin, and ciprofloxacin
d) Azithromycin, ethambutol, and clarithromycin
e) Rifabutin ethambutol, and amikacin

913. The first line of therapy in patients with PCP (Pneumocystis carinii pneumonia) includes the following mediations:
a) Trimethoprim plus dapsone
b) Clindamycin plus primaquine
c) Atovaquone alone
d) Trimethoprim-sulfamethoxazole
e) Trimethoprim-sulfamethoxazole with corticosteroids

914. Most common side effect of TMP-SMZ (trimethoprim-sulfamethoxazole) therapy is:
a) Anaphylaxis
b) Allergic reaction
c) Leukopenia
d) Neutropenia
e) Hepatotoxicity

915. Most common chronic lower respiratory tract abnormality in HIV-infected children is:
a) PCP
b) Asthma
c) Bronchiolitis
d) S. pneumoniae pneumonia
e) Lymphocytic interstitial pneumonitis (LIP)

916. LIP (Lymphocytic interstitial pneumonitis) is associated with the following infection:
a) P. carinii
b) S. pneumoniae
c) P. aeruginosa
d) Moraxella catarrhalis
e) Primary Epstein-Barr virus (EBV)

917. The characteristic chest x-ray finding in patients with LIP (Lymphocytic interstitial pneumonitis) is:
a) Hilar lymphadenopathy
b) Diffuse reticulogranular pattern
c) Sail sign
d) Bilateral mild pneumothorax
e) Chronic diffuse reticulonodular pattern

918. The adverse cardiac effect in children with AIDS encephalopathy or other conditions with AIDS is:
a) Sinus arrythmia
b) Resting sinus tachycardia
c) Resting sinus bradycardia
d) Congestive heart failure
e) Dilated cardiomyopathy

919. Most common oral manifestation in patients with HIV disease is:
a) Tonsillitis
b) Pharyngitis
c) Candidiasis

d) Tooth abscess
e) Gingivitis

920. Most common GI symptom in patients with HIV disease is:
a) Chronic diarrhea
b) Acute diarrhea
c) Chronic constipation
d) Vomiting
e) Rectal prolapse

921. The preferred therapy in patients with “the wasting syndrome” and AIDS is:
a) Multivitamins
b) Minerals
c) Vitamin D
d) Oral nutrition
e) TPN

922. Most common hepatic finding in patients with AIDS is:
a) Hepatoma
b) Biliary atresia
c) Cholestatic jaundice
d) Elevated liver enzymes
e) Indirect jaundice

923. A patient with AIDS appear with an abdominal pain, vomiting, and fever. Laboratory result reveals elevated pancreatic enzymes. She is being treated with pentamidine. Most likely diagnosis is:
a) AIDS induced pancreatitis
b) Gastroenteritis
c) Gastric ulcer
d) Diabetes mellitus
e) Pentamidine induced pancreatitis

924. A 20-month-old girl recently migrated from Asia. She is diagnosed to have AIDS with CNS involvements. All of the following are common clinical neurologic manifestations **except**:
a) Hyporeflexia
b) Loss of developmental milestones
c) Deterioration of cognitive functions
d) Acquired microcephaly
e) Symmetric motor dysfunctions

925. A mother is admitted at 20th week of pregnancy. The fetus developed cardiac failure due to arrythmia. The preferred therapy is:
a) Lasix to the mother
b) Lasix to the fetus
c) Digoxin to the mother
d) Digoxin to the fetus
e) Deliver the fetus

926. A child has dilated cardiomyopathy. She is receiving adequate digoxin and furosemide therapies. Her condition improves but not significantly. The preferred therapy is:
a) Continue digoxin and increase furosemide dose
b) Increase digoxin and furosemide doses
c) Discontinue digoxin and add ACE inhibitor along with furosemide
d) Continue digoxin and furosemide, add ACE inhibitor
e) Continue the same management

927. All of the following are mechanisms of action of ACE inhibitors (e.g., captopril) **except**:
    a) Arterial dilatation
    b) Venous dilatation
    c) Increase aldosterone production
    d) Reduce afterload and preload
    e) Cardiac remodeling independent on their influence on afterload

928. Adverse reactions of captopril include all of the following conditions **except**:
    a) Maculopapular rash
    b) Chronic cough
    c) Neutropenia
    d) Hypotension
    e) Improves renal function

929. A child has been receiving high dose intravenous nitroprusside for the past several days. He has an uncontrolled hypertension. The following parameter should be monitored:
    a) Serum BUN
    b) Serum creatinine
    c) Liver function tests
    d) Pancreatic enzymes
    e) Blood thiocyanate level

930. A child developed nausea, fatigue, disorientation, acidosis, and muscular spasms. She is in ICU. Most likely the child is receiving the following medication:
    a) Captopril
    b) Hydralazine
    c) Digoxin
    d) Dopamine
    e) Nitroprusside

931. The use of nitroprusside is contraindicated in the following condition:
    a) Seriously ill patients
    b) Pre-existing hypotension
    c) Increased preload
    d) Hypertension
    e) Increased afterload

932. The following statement is not true about dopamine:
    a) Predominantly alpha-adrenergic agonist
    b) Selective renal vasodilator effect
    c) Useful in patients with a compromised renal function
    d) Vasoconstriction predominates if the dose is increased above 15 microgram/kg/minute
    e) Increases cardiac contractility with little peripheral vasoconstriction at a dose 2–10 microgram/kg/ minute

933. Major side effect of milrinone (phosphodiesterase inhibitor) is:
    a) Hypertension
    b) Hypotension
    c) Bradycardia
    d) Thrombocytopenia
    e) Apnea

934. Preferred therapy in patients with milrinone-induced hypotension is:
    a) Hydralazine
    b) Decrease intravenous fluids
    c) Increased intravenous fluids
    d) Captroil

e) Nitroprusside

935. The side effect of amrinone therapy is:
a) Thrombocytosis
b) Thrombocytopenia
c) Leukocytosis
d) Polycythemia
e) Lymphocytosis

936. A child was admitted to the ICU for dilated cardiomyopathy. He has improved and the acute condition is over. The following medication is added as a part of chronic comprehensive heart failure treatment program:
a) Vitamin E
b) Metoprolol
c) Carvedilol
d) Milrinone
e) Vitamin A

937. Most common esophageal disorder in children is:
a) Decreased motility
b) Increased motility
c) Esophageal bleeding
d) Esophageal ulcers
e) Gastroesophageal reflux disease (GERD)

938. Fetuses can start swallowing as early as:
a) 8-10 weeks of gestation
b) 11-15 weeks of gestation
c) 16-20 weeks of gestation
d) 21-25 weeks of gestation
e) 26-30 weeks of gestation

939. At rest, a child's LES (lower esophageal sphincter) pressure is 20 mm Hg. The interpretation is:
a) Normal
b) Mildly increased
c) Moderately increased
d) Moderately decreased
e) Mildly decreased

940. Most common congenital anomaly of the esophagus is:
a) Esophageal hemangioma
b) Esophageal lymphangioma
c) Esophageal stenosis
d) Esophageal atresia
e) Esophageal duplication

941. Esophageal atresia is most commonly associated with the following condition:
a) VATER syndrome
b) Anencephaly
c) Hydrencephaly
d) Down syndrome
e) Tracheoesophageal fistula

942. Most common type of esophageal atresia and tracheoesophageal fistula is:
a) Both upper and lower ends of the esophagus are connected to the trachea.
b) Upper end of the esophagus is connected to the trachea and the lower end is ended blindly.
c) H-type connection between the trachea and the esophagus.

d) Both upper and lower ends of esophagus ended blindly, and are not connected to the trachea.
e) Upper end of the esophagus is ended blindly and the lower end of esophagus is connected to the trachea.

943. A 9-year-old girl appears with dysphagia for both solids and liquids. Past medical history reveals that she was admitted one time with respiratory distress and the diagnosis was pneumonia. Blood culture was negative at the time of admission. Chest x-ray reveals an air fluid level in a dilated esophagus. Barium fluroscopy reveals a "bird's beak" appearance. Most likely diagnosis is:
a) Achalasia
b) Esophageal malignancy
c) T-E fistula (H-type)
d) Upper esophageal sphincter (UES) dysmotility
e) Pyloric stenosis

944. Preferred initial therapy in patients with achalasia is:
a) Surgical (Heller) myotomy
b) Pneumatic dilatation
c) Botulinum toxin
d) Nifedipine
e) Phosphodiesterase inhibitors

945. A 9-year-old boy has an idiopathic cricopharyngeal spasm. He is schedule to have a myotomy in the next day. The following investigation is indicated prior to the myotomy:
a) Upper GI series
b) Echocardiogram
c) Head MRI
d) Chest CT scan
e) Pulmonary function testing

946. Preferred diagnostic study to detect the precise dysfunction of the upper esophageal sphincter (UES) is:
a) Barium swallow
b) Upper GI series
c) Manometry
d) Ultrasonography
e) Videofluroscopic evaluation of swallowing

947. Most common external mass that may compress the esophagus from outside is:
a) Double aortic arch
b) Right-sided aortic arch
c) Aberrant right subclavian artery
d) Enlarged mediastinal lymph nodes
e) Enlarged trachea

948. Most frequent site of foregut duplication is:
a) Esophagus
b) Pharynx
c) Stomach
d) Duodenum
e) Jejunum

949. Most common clinical manifestation in patients with an esophageal duplication cyst is:
a) Bleeding
b) Dysphagia
c) Neck mass
d) Nasopharyngeal mass
e) Respiratory distress

950. Most common site of peptic strictures is:
- a) Upper part of esophagus
- b) Middle part of esophagus
- c) Lower part of esophagus
- d) Stomach
- e) Duodenum

951. Preferred diagnostic study in patients with an esophageal duplication cyst is:
- a) Barium swallow
- b) Upper GI series
- c) Neck x-ray (AP view)
- d) Neck x-ray (lateral view)
- e) Neck x-ray (oblique view)

952. Preferred therapy in patients with an esophageal duplication cyst is:
- a) Surgery
- b) Follow up after 1 month
- c) Follow up after 3 months
- d) Follow up after 6 months
- e) Follow up after 12 months

953. In retarded children, sliding hernia is most frequently associated with:
- a) Gastric ulcer
- b) Esophageal ulcer
- c) Esophageal bleeding
- d) Gastric bleeding
- e) Gastroesphageal reflux

954. The major primary mechanism of gastroesophageal reflux is:
- a) Gastric obstruction
- b) Vasovagal reflex
- c) Transient lower esophageal sphincter relaxation
- d) Intestinal obstruction
- e) Hirschsprung disease

955. All of the following factors increase GE reflux due to alteration of gastric pressure volume dynamic **except:**
- a) Decreased movements
- b) Obesity
- c) Straining
- d) Coughing and wheezing
- e) Large volume or hyperosmolar meal

956. Most of the infants symptom with GE reflux usually resolve by:
- a) 6 months of age
- b) 9 months of age
- c) 12 months of age
- d) 24 months of age
- e) 36 months of age

957. In older children, GE reflux completely resolves in:
- a) Up to 25% of cases
- b) Up to 50% of cases
- c) Up to 75% of cases
- d) Up to 90% of cases
- e) Up to 100% of cases

958. In autosomal dominant variety of GE reflux, the following chromosomes are involved:
   a) 1 and 5
   b) 13 and 9
   c) 14 and 10
   d) 15 and 11
   e) 21 and 18

959. All of the following are clinical manifestations in **infants with GE reflux except**:
   a) Obstructive apnea
   b) Postprandial regurgitation
   c) Failure to thrive
   d) Irritability
   e) Asthma

960. All of the following are clinical manifestations in older **children with GE reflux except**:
   a) Abdominal pain
   b) Chest pain
   c) Sandifer syndrome
   d) Asthma
   e) Regurgitation in school years

961. Most of the patients with GERD (gastroesophageal reflux disease) are diagnosed initially by the:
   a) History and physical examination
   b) Barium swallow
   c) Upper GI series
   d) Esophageal pH monitoring
   e) Endoscopy

962. The most important indications for esophageal pH monitoring in patients with GERD are all of the following conditions **except**:
   a) Efficacy of acid suppression before treatment
   b) To evaluate apneic episodes in conjunction with a pneumogram
   c) To evaluate atypical GERD secondary to chronic cough
   d) To evaluate atypical GERD secondary to stridor
   e) To evaluate atypical GERD secondary to asthma

963. Preferred initial therapies in patients with GERD include all of the following **except**:
   a) Dietary measures
   b) Positioning
   c) Proton pump inhibitors
   d) Histamine-2 receptor antagonists
   e) Fundoplication

964. AAP (American Academy of Pediatrics) recommend the following positioning in **infants with GERD** during sleep:
   a) Supine
   b) Prone
   c) Seated position
   d) Extra pillows
   e) Head elevation

965. The following positioning may benefit in **older children with GERD** during sleep:
   a) Seated position
   b) Extra pillows
   c) Supine
   d) Head elevation and right side position

e) Head elevation and left side position

966. The most potent antireflux therapy in patients with GERD is:
a) Prokinetic agents
b) Antacids
c) Histamine-2 receptor antagonist
d) Dietary measures
e) Proton pump inhibitors

**Match all of the following medications and their actions (967-971):**

967. Omeprazole
968. Famotidine
969. Metoclopramide
970. Bethanicol
971. Erythromycin
a) Motilin receptor agonist
b) Cholinergic agonist
c) Dopamine-2 and 5HT-3 antagonist
d) Inhibits histamine receptors on gastric parietal cells
e) Blocks the hydrogen-potassium ATPase channels

972. Fundoplication surgery is indicated in the following condition in patients with GERD:
a) Intractable GERD with strictures or esophagitis
b) Mild reflux esophagitis
c) Moderate reflux esophagitis
d) Severe esophagitis
e) Erosive esophagitis

973. The most important predictor of a successful surgical outcome in patients with GERD is:
a) Preoperative accuracy of diagnosis of GERD
b) Severe esophagitis
c) Moderate esophagitis
d) Erosive esophagitis
e) Mild esophagitis

974. Most common site of esophageal tear in children is:
a) Proximal left lateral wall
b) Distal right lateral wall
c) Anterial wall
d) Proximal right lateral wall
e) Distal left lateral wall

975. Most common site of spontaneous esophageal rupture in neonates (neonatal Boerhaave syndrome) is on the:
a) Right side
b) Left side
c) Anterior
d) Posterior
e) Proximal

976. A child appears with the sudden onset pain in the throat that is soothed by cold water polydipsia. He denies history of trauma. Most likely diagnosis is:
a) Acute pharyngitis
b) Acute tonsillitis
c) Retropharyngeal abscess
d) Thoracic esophageal rupture

e) Cervical esophageal perforation

977. A child appears with neck pain, neck tenderness, fever, dysphagia, crepitus, and tachycardia secondary to an automobile accident. Most likely diagnosis is:
a) Retropharyngeal abscess
b) Stomach rupture
c) Esophageal rupture
d) Laryngeal rupture
e) Peritonsillar abscess

978. Initial diagnostic study in patients with esophageal perforation is:
a) Esophagogram (water-soluble contrast)
b) Barium swallow
c) Esophagoscopy
d) CT scan
e) Cervical spine and chest x-ray

979. All of the following therapies are indicated in patients with a mild esophageal rupture **except**:
a) Broad-spectrum antibiotic
b) Nothing my mouth
c) Gastric drainage
d) Parenternal nutrition
e) Surgical repair

980. A child appears with hematemesis. Physical examination reveals splenomegaly. Most likely diagnosis is:
a) Esophageal perforation
b) Esophageal foreign body
c) Esophageal varices
d) Gastric ulcers
e) GERD (gastroesophageal reflux disease)

981. The preferred diagnostic test in patients with esophageal varices is:
a) Fluroscopic barium study
b) Upper GI series
c) Ultrasonography
d) CT scan
e) Endoscopy

982. Preventive therapy in esophageal varices is:
a) Sclerotherapy
b) Ice cold water
c) Balloon dilatation
d) Pneumatic pressure
e) Embolization within the varices

983. Apnea occurs in infants with GERD due to the following condition:
a) Laryngospasm causing obstructive apnea
b) Laryngeal relaxation causing aspiration and apnea
c) Vagal stimulation causing apnea
d) Pharyngeal stimulation causing apnea
e) Esophageal bleeding causing apnea

984. Barrett esophagus is a precursor of esophageal:
a) Squamous cell cancer
b) Adenocarcinoma
c) Lymphoma

d) Myoma
e) Hemangioma

985. Barett esophagus occurs due to long-standing esophagitis. Barrett esophagus indicates the following changes:
a) Transformation of normal squamous epithelium into intestinal columner epithelium
b) Transformation of normal columner epithelium into intestinal squamous epithelium
c) Transformation of columner epithelium into flattened epithelium
d) Transformation of columner epithelium into elongated epithelium
e) Transformation of squamous epithelium into undifferentiated cells

986. A child appears with wheezing, throat infection, postnasal drip, and voice overuse. He was diagnosed with asthma about 6 months age. He is receiving bronchodilator therapy. He was treated for throat infections on several occasions in the past 6 months. Physicians told the mother that she has an environmental allergy. However, allergic tests and throat cultures were negative. Most likely diagnosis is:
a) Atypical GERD
b) Cystic fibrosis
c) Sinusitis
d) Viral pharyngitis
e) Asthma
987. Preferred therapy in patients with atypical GERD is:
a) Refer to ENT specialist
b) Refer to GI specialist
c) Inhalation corticosteroids
d) Prophylactic antibiotics
e) Use proton pump inhibitors for at least 3 to 6 months

988. A 7-year-old boy appears with vomiting, dysphagia, and chest pain. He denies history of trauma. He has atopy and history of food allergies. Sometimes, he feels that the food has stuck in the throat. Physical examination reveals that the throat is mildly injected. CBC reveals high eosinophil counts and elevated serum IgE levels. The patient was referred to an ENT specialist. Endoscopy reveals a granular appearance of the esophagus. Most likely diagnosis is:
a) Esophageal varices
b) Eosinophilic esophagitis
c) Barrett esophagus
d) GERD
e) Atypical GERD

989. Preferred therapy in patients with eosinophilic esophagitis is:
a) Proton pump inhibitors
b) Antihistamines
c) Antibiotics
d) Reassurance
e) Elimination diets and corticosteroids

990. A 16-year-old girl appears in the ER at 2 AM with an acute onset of retrosternal pain, dysphagia, and odynophagia (pain produced by swallowing). She took a NSAID (nonsteroidal anti-inflammatory medication) for fever about 10 PM last night. She experienced an acute discomfort at that time. The patient was referred to an ENT. Chest x-ray is normal. Endoscopy reveals a focal lesion in the esophagus. Most likely diagnosis is:
a) GERD
b) Atypical GERD
c) “Pill” esophagitis
d) Adenocarcinoma of the esophagus
e) Esophageal perforation

991. Preferred therapy in patients with a “pill” esophagitis is:
a) Antacids

b) Topical anesthetics
c) Bland or liquid diets
d) Proton pump inhibitors
e) Supportive

992. Most common associated finding in children with asthma is:
a) GERD
b) Recurrent pharyngitis
c) Recurrent tonsillitis
d) Recurrent sinusitis
e) Recurrent otitis media

993. A routine dental examination in the child reveals dental erosions on the lingual surface only. The child is receiving asthma medication for the last 1 year with no improvements. He missed school on several occasions. He likes candies. Most likely diagnosis is:
a) Ulcers on the tongue
b) Tooth abscess
c) Gingivitis
d) Oral candidiasis
e) A complication of GERD

994. Most common oral lesion in patients with GERD is:
a) Candidiasis
b) Dental erosions
c) Pharyngitis
d) Tonsillitis
e) Gingivitis

995. A 15-year-old boy has a Barrett esophagus that can turn into adenocarcinoma. The preferred management may include all of the following **except**:
a) Chemotherapy (prophylaxis)
b) Proton pump inhibitors
c) Dietary measures
d) Periodic surveillance biopsies
e) Fundoplication

996. Most commonly ingested material causing esophagitis, necrosis, stricture, and perforation is:
a) Liquid acid
b) Liquid alkali
c) Alcohol
d) Baking soda
e) Nicotine containing gum

997. Most common accidentally ingested caustic material is:
a) Drain decloggers
b) Liquid acids
c) Perfumes
d) Alcohol
e) Soy sauce

998. A child appears in the ER with vomiting, dysphagia, refusal to drink, abdominal pain, and mild stridor. The child accidentally ingested drain decloggers. Physical examination reveals oral lesions and stridor. The preferred investigation for tissue damage is:
a) Barium swallow
b) Upper GI series
c) Plain chest x-ray

d) CT scan
e) Upper endoscopy

999. A child appears in the ER with a history of caustic ingestion 1 hour prior to arrival. The child is asymptomatic. Physical examination is unremarkable. Absence of oral lesions cannot exclude the following condition:
a) Tongue injury
b) Tonsillar injury
c) Pharyngeal injury
d) Gingival injury
e) Significant esophageal injury

1000. Therapy for an acute caustic ingestion is the following:
a) Induced emesis
b) Gastric lavage
c) Netutralization by acid
d) Netutralization by alkali
e) Dilution by water or milk

**Match all of the following medications and their side effects (1001-1005):**

1001. Allopurinol
1002. Prostaglandin
1003. Aminocaproic acid
1004. Antivenin (Crotalidase) polyvalent
1005. Ascorbic acid
a) Anaphylaxis
b) Apnea
c) Renal stones
d) Erythema multiforme
e) Arrythmias

**Match all of the following medications and their side effects (1006-1010):**

1006. Beclomethasone
1007. Azathioprine
1008. Atropine sulfate
1009. Atenolol
1010. Astemizole
a) Oral candidiasis
b) Fever and chills
c) Dry hot skin
d) Bradycardia
e) Syncopal episodes

## ANSWERS

| No. | | **Correct Answer** |
|---|---|---|
| 1. | a) | Patients with Asperger disorder do **not** have severe language impairments that characterize autism. They have a high risk of psychiatric disorders (e.g., mood disorders, oppositional-defiant disorder). |
| 2. | a) | Group social skills training is the hallmark of intervention in patients with Asperger syndrome. |
| 3. | d) | 6 years of age |
| 4. | d) | 7-14 years of age. All other sinuses (e.g., frontal, maxillary, sphenoid) reach their maximum size after puberty. |
| 5. | e) | 6 years of age. |
| 6. | b) | Parents should not tell their children to be a “good girl” or “good boy”. |
| 7. | d) | A rectal examination is important to document fecal impaction. The evidence of fecal retention indicates chronic constipation that should be treated effectively |
| 8. | a) | Plain abdominal X-ray should be performed in absence of fecal impaction to rule out other abnormalities. Some children have an abnormal anal sphincter physiology that is documented by electromyography or difficulty in defecating rectal balloon |
| 9. | a) | Long-term laxative use is contraindicated. A referral to gastroenterologist is rarely required. Megacolon is a rare finding. Tricyclic antidepressants should be avoided in children with retentive encopresis because they can cause constipation and cardiac dysrhythmias. To train anal sphincter muscle may or may not be useful. |
| 10. | b) | Vitamin C excess can cause oxaluria. Vitamin C deficiency can cause scurvy and poor wound healing. |
| 11. | e) | Vitamin B6 dependence seizure can occur as long as 6 month after birth. The seizure is typically myoclonic with a hypsarrhythmic EEG. In many cases, mother received large dose of pyridoxine during pregnancy to control vomiting. |
| 12. | e) | Brain hemorrhage. Hypernatremia only affects the brain. Hypernatremia increases extracellular osmolality resulting in a decrease in brain volume as water moves out of brain cells. Brain moves away from the skull and meninges resulting in tearing of intracerebral veins and bringing blood vessels. |
| 13. | b) | Seizures |
| 14 | c) | Thrombocytosis. For every 100,000 increase in the platelet count, the serum potassium level increases by approximately 0.15 mEq/L. Potassium is released from platelets. Leukocytosis, especially greater than 200,000 (e.g., leukemia) causes hyperkalemia. |
| 15, | b) | Magnesium. Diarrhea in chronically malnourished children produces low serum sodium, potassium, magnesium, and protein (less than 3.6 g/dl) levels. However, the sodium content of muscle is high; potassium and magnesium contents are low. ECG reveals low amplitude, flat or inverted Twaves. Magnesium therapy improves clinical conditions and ECG findings. |
| 16. | e) | To route the traffic away from schools and residential areas, and to slow the speed of traffic are the most important measures to prevent pedestrian injuries. Answers (a), (b), (c), (d), engineering changes in roadway design, pedestrian skill training, prohibit right-turn-on red light, one-way-street networks, and comprehensive traffic ‘calming’ schemes are also effective strategies to prevent pedestrian injuries. |
| 17. | b) | Private dwellings (over 80% of cases) |
| 18. | b) | Smoke asphyxiation (60% of cases) |
| 19 | b) | Lower the water heater temperature to **125°F (51.6°C)**. Community restrictions on certain types of fireworks and adult supervision of all types of fireworks can reduce injuries. |
| 20. | a) | Inositol is an idiogenic osmol that is formed during the acute phase of diabetic ketoacidosis to counteract the effects of hyperglycemia. When serum osmolality declines too rapidly, idiogenic osmoles attract water into the cells, resulting in cerebral edema. |
| 21. | e) | Abdominal CT scan with intravenous contrast can detect structural and functional abnormalities of spleen, liver, and kidney. |

22. c) Nonoperative therapy is a preferred therapy because it decreases the need for blood transfusions and shortens hospital stay. Laparotomy is indicated in patients with a bowel perforation, hemodynamic instability, and the need for repeated blood transfusions (40 mL/kg/day). Splenic repair is preferred to splenectomy in patients with severe splenic injury.

23. b) Calcitriol (1, 25-vitamin D) increases intestinal absorption of phosphorous. Low plasma phosphorous stimulates the 1-alpha hydroxylase in the kidney that converts 25-vitamin D to 1, 25-vitamin D.

24. a) **PTH** (parathyroid hormone) is selected in response to low plasma calcium. PTH decreases reabsorption of phosphate and increases urinary phosphate. Hypercalcemia decreases PTH secretion. **Phosphatonin** (humoral mediator) inhibits renal reabsorption of phosphorous resulting in phosphaturia and hypophosphatemia.

25. e) The goal of informed consent is full understanding the benefits and risks of the potential course of action. Informed consent is required for only certain procedures and therapies.

26. e) Parents should review the chart together with the treating physician. Physicians should answer questions and explain unfamiliar medical terminology.

27. a) NSAIDs are used in cold-induced fat necrosis (panniculitis). This a benign condition. The lesions may last up to 3 weeks.

28. e) Racemic epinephrine aerosols therapy are effective in patients with postoperative stridor. In severe cases, reintubation is indicated.

29. d) Seizures are absent in neuraxial anesthesia (e.g., epidural, spinal or subarachnoid).

30. e) Infection and epidural hematoma are extremely rare. Nausea and vomiting occur occasionally.

31. b) Trisomy. Trisomies are usually the result of meiotic nondisjunction i.e., failure to separate a chromosome pair.

32. b) X-linked recessive disorders are more common in females with Turner syndrome (45, X) because they are homozygous for all genes on the X-chromosome and expresses all genes at all loci, like males. Sons of females carrying the gene have a 50% chance of inherting the gene. The gene may be transmitted through series of carrier females i.e., affected males are related with the carrier females.

33. a) Mutations at the LQT1 (63%) have the highest risk of cardiac events.

34. a) LQT1. However, patients with mutations of LQT2 and LQT3 more likely to experience cardiac events during sleep or rest, and rarely during exercise.

35. a) The genetic testing should serve the best interest of children. The potential benefits should be more than harms to children. The consent should be obtained by the physician before the genetic testing. If a child between the **age of 7 and 14** years is candidate for testing, **'assent'** (i.e., child's affirmative agreement to agree with the decision of the parents) should be obtained. Adolescents who are **14 years or older** can give **assent or consent** because they are considered mature minors.

36. e) Rhizomelic chondrodysplasia punctuata (RCDP) patients have normal very long chain fatty acids (VLCFA) levels in plasma.

37. a) Severe shortening of the **proximal** limbs, dwarfism, hypertelorism, and depressed nasal bridge are also noted. X-ray picture reveals shortening of proximal limb bones, metaphyseal cupping, and abnormal ossification (e.g., epiphyseal stippling).

38. b) L-Xylulose reductase deficiency is noted in patients with pentosuria that is a benign condition. Urine reducing substance is present.

39. c) Myophosphorylase deficiency is noted in patients with McArdle disease. This disease is more common in males than females. Patients appear with exercise intolerance, muscle cramps, and increased fatigability.

40. e) Glucose transporter-2 deficiency is noted in patients with Fanconi-Bickel syndrome. Patients appear with failure to thrive, rickets, proximal renal tubular dysfunction, impaired glucose and galactose utilization, and hepatosplenomegaly.

41. d) Phosphofructokinase deficiency is noted in patients with Tauri disease. Patients appear with exercise intolerance, muscle cramps, myoglobinuria, and hemolytic anemia.

42. a) Amylo, 1, 6 glucosidase deficiency is noted in patients with Cori or Forbes disease. Patients appear with growth retardation, hepatomegaly, hypoglycemia, muscle weakness, hyperlidemia, and elevated liver enzymes.

43. a) Headache is a feature of cerebral glucopenia. Release of epinephrine also produces tremor, hunger, vomiting, and angina with normal coronary arteries.

44. d) Cerebral glucopenia may cause decreased concentration, headache, dysarthria, staring, seizures, ataxia, stroke, decerebrate or decorticate posture, and coma.

45. c) Diazoxide causes hyperuricemia, electrolyte disturbances, and rarely, hypotension with prolonged use.

46. e) Total pancreatectomy is not optimal therapy because it causes permanent diabetes mellitus, exocrine pancreatic insufficiency, and the risks of surgery. Many children with hyperinsulinemic hypoglycemia improve with medical therapy. A long-acting somatostain analogue (octreotide) can control hyperinsulinemic hypoglycemia in patients with islet cell disorders not caused by genetic mutations in KATP channel and islet cell adenoma.

47. e) Codeine is safe but can cause sedation.

48. e) Phenytoin does not cause sedation.

49. a) Staphylococcus aureus or gram-negative rods is the most common organism; more often sterile.

50. a) Maternal serum alpha-fetoprotein levels are decreased in trisomies and aneuploidy. Maternal serum alpha-fetoprotein levels are elevated in hepatitis, fetal demise, and incorrect gestational age.

51. e) Quantitative amniotic fluid volume (AFV) is not measured. Qualitative AFV is measured.

52. d) Dexamethasone can cause periventricular lenkomalacia.

53. b) Pyridoxine can cause seizure activities.

54. c) Oxytocin can cause jaundice and hyponatremia.

55. e) Captopril and enalapril can cause transient anuric renal failure and oligohydramnios.

56. a) Blue cohosh herbal tea can cause heart failure.

57. b) Warfarin prevents carboxylation of gamma- carboxyglutamic acid that is a component of osteocalcin and other vitamin K dependent bone proteins resulting in teratogenic effects on developing cartilage (e.g., nasal cartilage). This effect can be avoided by switching from warfarin to heparin between 6 to 12 weeks of gestation. Heparin does not cross the placenta.

58. a) Phenytoin causes teratogenic effects from accumulation of metabolites due to deficiency of epoxide hydroxylase.

59. c) Propylthionracil and iodides causes neonatal hypothyroidism by interfering the conversion of inorganic to organic iodides.

60. c) Interleukin 6 and prostaglandins are local inflammatory mediators.

61. e) Long-term complications of parenteral nutrition are cholestatic jaundice and metabolic bone disease. Other short-term complications are osmotic diuresis and dehydration due to hyperglycemia; hypoglycemia is due to sudden cessation of TPN (total parenteral nutrition); hyperammonemia is due to high level of amino acids; and possibly hypoxemia is due to from intravenous lipid infusions.

62. e) Properly fed premature infants can have from one to six stools with semisolid consistency daily. The presence of abdominal distension and gross blood in stools suggests NEC (necrotizing enterocolitis).

63. d) Vitamin K analogs, novobiocin, and phenolic detergents can cause jaundice.

64. b) Cisapride can produce prolonged Q-Tc intervals.

65. c) Amphotericin can cause hypokalemia, hypomagnesemia, and acute renal failure.

66. a) Reserpine can cause nasal stuffiness.

67. e) Sodium bicarbonate can cause IVH (intraventricular hemorrhage).

68. c) Vitamin C.

69. b) Vitamin C. The absorption of vitamin K is also decreased.

70. c) Folic acid is essential for the formation of DNA and production of new cells.

71. b) Vitamin E deficiency can cause hemolysis and anemia.

72. a) Vitamin K deficiency can cause intestinal bleeding (e.g., exclusively breast-fed infants).

73. e) Intraventricular hemorrhage is the diagnosis because hematocrit did not improve after PRBCs transfusion and platelet count dropped from 350,000 to 150,000.

74. b) Medial traction on the head and neck does not produce brachial palsy. About 45% of brachial palsy is associated with shoulder dystocia.

75. e) C5-C6 (75% of cases)

76. c) C7, C8, and T1 injuries produce a paralyzed hand.

77. a) Penicillin

78. a) Hydrocephalus is absent. Other long-term complications are microcephaly and chorioretinitis.

79. e) Total anomalous pulmonary venous return

80. e) Congenital alveolar proteinosis (e.g., congenital surfactant protein B deficiency) is a rare familial disease.

81. e) Persistent supraventricular tachycardia is not an indication for assisted mechanical ventilation.

82. e) **Excessively** increased PEEP (positive end-expiratory pressure) reduces venous return, reduces cardiac output, and decreases oxygen delivery. Increased PEEP (4-6 cm $H_2O$) usually increases oxygenation. Answers (b), (c), (d), and (e) increase MAP (mean airway pressure). Increased MAP results in increased oxygenation.

83. d) Bladder outlet obstruction. The newborn has a persistent urachus (urachal cyst) that is associated with bladder outlet obstruction. The clear, light yellow fluid is urine.

84. d) SMR 4 (Sex Maturity Rating ) (about 60%); SMR 3 (20% of cases); SMR 2 and 5 (each 10% of cases).

85. a) Imperforate hymen. Answers (b), (c), (d) and (e) also cause primary amenorrhea.

86. d) LH:FSH ratio is greater than 3 in patients with PCOS. Patients with PCOS have an increased risk of diabetes mellitus.

87. a) AIDS causes lymphocytopenia due to destruction of CD4 T cells infected with HIV-1 or HIV-2.

88. a) Fe1 d 1 is the major cat allergen that is highly charged protein that readily sticks to walls, carpets, and furnitures.

89. c) Maternal diabetes. Maternal obesity is a less important factor than maternal diabetes.

90. a) Obesity epidemic

91. d) Young children

92. a) Breast-fed infants are less likely to develop adult obesity than bottle-fed infants. Vending machines in schools should not provide high-calorie snacks and beverages. Television viewing increases obesity that is most likely due to lack of physical activities.

93. e) Intravenous dantrolene sodium. Malignant hyperthermia is an acute hypermetabolic syndrome that is triggered by inhalation anesthetic agents and succinylcholine. Repeated dantrolene doses may be required in patients with persistent muscle rigidity, acidosis, and tachycardia. The patient should be observed at least 24 hours after the laboratory values returned to normal because of potential relapse.

94. b) Measuring muscle $O_2$ production in response to administration of intravenous caffeine is **not** indicated.

95. b) Respiratory depressants and muscle weakness. Therefore, dantrolene prophylaxis is not recommended in patients susceptible to develop malignant hyperthermia.

96. a) Postoperative apneas are both central and obstructive types (mixed apnea). Apnea is common in premature infants up to 60 weeks postconceptual age and in full-term infants up to 44 weeks postconceptual age. Therefore, postoperative monitoring for at least 24 hours after anesthesia is indicated. Theophyllines do not ablate apnea and are not routinely used.

97. d) Classic maple syrup urine disease (MSUD). In patients with MSUD, correction of hypoglycemia does not improve the clinical conditions.

98. c) Marked elevation in plasma leucine, isoleucine, and valine confirms the diagnosis of MSUD.

99. a) Peritoneal dialysis and hemodialysis are the most effective therapies in critically ill patients with MSUD. Patients should receive a low branched-chain amino acid diet with synthetic formulas devoid of leucine, isoleucine, and valine. Liver transplantation was performed in few patients with good results.

100. a) Addition of isoleucine to the diet. The patients with very low plasma levels of isoleucine can have a clinical manifestation resembling acrodermatitis enteropathica.

101. a) E. coli

102. e) Uridyl transferase deficiency galactosemia is the diagnosis. This is a typical clinical manifestation of galactose-1-phosphate uridyl transferase deficiency galactosemia.

103. e) Learning disabilities, developmental delays, speech disorders, and ovarian failure with primary or secondary amenorrhea are noted in long-term follow-up in patients with galactosemia who received galactose free diet.

104. e) Children with total cholesterol levels are 170-199 mg/dL should have another total cholesterol measurement, and if the average of two values are more than 170 mg/dL, a lipid profile should be performed. Children with a family history of early coronary heart disease (i.e., before the age of 55 in parent or grandparent) should have a lipid profile performed.

105. d) Perinatal asphyxia does not produce pneumothorax.

106. e) Pierre Robin syndrome and DiGeorge syndrome have hypoplasia of the mandible.

107. e) Choanal atresia. An oropharyngeal airway should be placed immediately.

108. e) Dislocated cartilaginous portion of the nasal septum is the most prevalent injury of the nose. Surgical consultation is indicated. An oral airway is rarely needed.

109. e) Anorexia nervosa is also characterized by increased physical activities, studiousness, academic success, absence of hunger, bizarre eating behavior, and preoccupation with food preparations. They are considered ‘model children’ before the onset of illness.

110. a) A minimum average of two binge eating episodes per week for **at least 3 months** is a criterion in bulimia. The patients with bulimia use laxative after binge eating. Their self- evaluation is unduly influenced by body weight and shape.

111. a) Phenothiazines are contraindicated in patients with amphetamine or metamphetamine overdose because phenothiazines can cause seizure activities and hypotension. Haloperidol or droperidol is used for agitation and delusional behaviors. Lorazepam or diazepam is used for sedation and may be effective in arrythmias. Cooling blanket is used for hyperthermia. Antihypertensive medications are used for hypertension.

112. e) Fibroadenoma (68% of cases)

113. b) Cocaine does not cause gynecomastia. Alcohol abuse causes gynecomastia.

114. e) In chronic granulomatous disease, there is failure to activate neutrophil respiratory burst resulting in failure to kill catalase-positive microbes.

115. a) In Chediak-Higashi syndrome, there is decreased neutrophil chemotaxis, degranulation, and bactericidal activities.

116. d) In leukocyte adhesion deficiency 1, there is decreased binding of C3bi to neutrophils.

117. b) In Familial Mediterranean Fever, there is excessive accumulation of neutrophils at inflamed sites.

118. c) In hyperimmunoglobulin E syndrome, there is impaired IgG opsonization of Staphylococcus aureus and impaired chemotaxis at times.

119. e) Thick, purulent nasal secretions indicate the presence of an infection. Answer (a) is called the **allergic salute**. Answer (b) is called the **allergic gape**. Answer (c) is called the **nasal crease**. Answer (d) is called the **allergic shiners**.

120. d) The triad asthma is characteristically associated with nasal polyposis/hyperplastic sinusitis, and hypersensitivity to aspirin and nonsteroidal anti-inflammatory medications (e.g., ibuprofen).

121. a) Spirometry is the gold standard to measure airflow in patients with asthma. Spirometry measures airflow and lung volumes during a forced expiration. Answer (e) (peak expiratory flow monitoring) is simple, inexpensive, but in some patient, PEF declines only when airflow obstruction is severe. PEF morning-to-evening changes more than 20% is consistent with asthma.

122. c) Chromosome 5q.

123. a) Polyarthritis RF-seropositive, oligoarthritis RF-seropositive, and systemic disease ployarthritis have poor prognosis. Answers (b), (c), (d), and (e) have good prognosis. Polyarthritis seronegative has variable prognosis.

124. a) Oligoarthritis ANA-seropositive has an excellent prognosis except eyes (chronic anterior uveitis or iridocyclitis).

125. c) Mixed connective tissue diseases have ribonucleoprotein antigen.

126. d) Scleroderma has Scl antigen.

127. e) Sclerodermatomyositis has Pm-Scl antigen.

128. b) Systemic lupus erythematosus has Sm antigen.

129. a) Sjogren syndrome has Ro/SSA and La/SSB antigens.

130. b) Increased lymphocyte activity.

131. e) Rarely, the child will develop rheumatic disease.

132. a) ANA and rheumatoid factor are not detectable in Kawasaki disease. Positive ANA test are also noted in patients with chronic autoimmune hepatitis, some drugs (e.g., phenytoin, ethosuximide, procainamide), and rarely, leukemia or lymphoma.

133. c) Orthopedic surgeon does not belong in core team. Other participants in core team are child, parents, physical therapist, occupational therapist, family physician, social worker, and dietitian. Consultant team includes orthopedic surgeon, dentist, school nurse, psychologist, and psychiatrist.

134. e) Intramuscular corticosteroids are not used. Other medications used in rheumatic disease are sulfasalazine, cyclophosphamide, cyclosporine, etanercept, and corticosteroids (oral, intravenous, pulse, ophthalmic, intra-articular).

135. e) Ibuprofen can produce aseptic meningitis in some patients with SLE.

136. d) Naproxen can produce pseudoporphyria (i.e., small hypopigmented flat scars with minor trauma).

137. c) Methotrexate can produce elevated liver enzymes, GI toxicity, stomatitis, headache, leukopenia, interstitial pneumonitis, rash, and alopecia.

138. b) Hydroxychloroquine can produce retinal toxicity and blindness.

139. a) Sulfasalazine can produce Stevens- Johnson syndrome.

140. b) Cyclophosphamide can cause cystitis, bone marrow suppression, alopecia, oral ulceration, GI ulceration, and long-term use can cause bladder cancer, leukemia, lymphoma, and sterility.

141. d) IVIG can produce aseptic meningitis and severe systemic allergic reactions.

142. c) Hydroxychloroquine can cause myasthenia-like weakness, bone marrow suppression, CNS stimulation, and especially retinal toxicity or loss of central vision resulting in blindness. **Therefore, complete ophthalmologic evaluations every 4-6 months are mandatory**.

143. e) Tumor necrosis factor (e.g., etanarcept) can increase systemic infections. Tuberculosis should be ruled out before TNF therapy.

144. a) Intravenous glucocorticoids can cause cardiac arrythmias, acute hypertension, hypotension, and shock.

145. b) Group A Streptococcus and Kingella kingae bacteremia are serious complications of HSV gingivostomatitis but these infections occur rarely .

146. e) Herpes simplex virus

147. d) Submaxillary lymphadenitis

148. d) Varicella vaccine should not be given within 4 weeks of MMR vaccine because of breakthrough varicella disease. Therefore, varicella vaccine and MMR vaccine can be administered simultaneously at different sites or be given at least 4 weeks apart.

149. c) VZIG is not indicated in newborn infant whose mother onset of chickenpox beyond 5 days before delivery or beyond 2 days after delivery. However, VZIG is indicated in susceptible pregnant women. VZIG should be given as soon as possible and no later than 96 hours after exposure.

150. e) VZIG is not indicated if the mother has herpes zoster.

151. d) ABO incompatibility (20-25% of pregnancies), hemolytic disease occurs in 10% of such offspring, and the newborns are usually **type $A_1$**, which is more antigenic than $A_2$.

152. a) Cord hemoglobin of 10 g/dL or less and bilirubin of 5 mg/dL or more suggest severe hemolysis but inconsistently predict the need for an exchange transfusion.

153. e) Prematurity, low birthweight, withdrawal symptoms, and a higher risk of neonatal mortality are noted in neonates born to women who use heroin.

154. d) Jaundice is decreased due to enzyme induction of hepatic glucuronyl transferase. Heroin addiction results in low birthweight (50%of cases), about half of them are SGA. Heroin decreases RDS (respiratory distress syndrome) in newborns due to increased production of pulmonary surfactant.

155. e) Preeclampsia is usually treated with magnesium sulfate that causes hypermagnesemia. Patients with hypomagnesemia (less than 1.5 mg/dL) are treated with intramuscular injection of magnesium sulphate. Hypomagnesemia is associated with hypocalcemia and the clinical manifestations are same as hypocalcemia and tetany.

156. d) This is a characteristic presentation of fetal alcohol syndrome. They have varying degree of developmental delay and mental deficiency.

157. e) Normal serum pH; acidemia produces less binding of calcium and increases ionized (or free) calcium; alkalemia produces more binding of calcium, decreases ionized calcium , and symptoms of hypocalcemia. In a normal condition, each 1 g/dL of albumin in the serum binds about 0.8 mg/dL of calcium. Answers (a), (b), (c), and (d) produce hypoalbuminemia.

158. a) Breast milk (300 mg/L)

159. c) Cow's milk (1200 mg/L)

160. b) Formula (530 mg/L)

161. b) In the skin, synthesis of vitamin D occurs when 7-dehydrocholesterol is exposed to ultraviolet light (e.g., sun).

162. c) In the liver, vitamin D is hydroxylated to produce 25-hydroxyvitamin D.

163. a) In the kidney, 25-dihydroxyvitamin D is converted into 1, 25-dihydroxyvitamin D by the enzyme 1 alpha-hydroxylase.

164. c) Parathyroid hormone (PTH) increases calcium reabsorption. PTH is the principal regulator of urinary calcium excretion. PTH acts on the ascending limb of the loop of Henle and distal nephron. Urinary calcium excretion is also increased by osmotic diuretics, loop diuretics, volume expansion, prolonged fasting, metabolic acidosis, and hyperphospatemia. PTH increases urinary excretion of phosphate and bicarbonate.

165. d) Intravenous calcium gluconate (100-200 mg/kg, 1-2 mL/kg of a 10% solution; 9-18 mg of elemental Ca/kg); the dose may be repeated every 6-8 hours until the calcium level stabilizes.

166. e) Similac PM 60/40 has low phosphorus and low calcium contents. Therefore, oral calcium supplementation is indicated in addition to Similac PM 60/40.

167. b) Prolonged immobilization causes hypercalcemia that usually occurs within 1-3 weeks after leg fractures and 4-8 weeks after spinal cord injuries.

168. a) Malignancies can cause hypercalcemia by direct bone invasion and destruction.

169. a) Jansen metaphyseal chondrodysplasia, a defective PTH receptor can cause hypercalcemia.

170. a) Infantile form of hypophosphatasia can cause hypercalcemia, hypercalciuria, and nephrocalcinosis.

171. b) Acute rhabdomyolysis cause hypocalcemia because of hyperphosphatemia and calcium deposition in injured tissues.

172. e) Tissue necrosis and calcification occur due to intravenous extravasation of calcium. Intravenous calcium causes bradycardia and increases digoxin toxicity.

173. e) Dent disease is a X-linked disorder and is a result of defective chloride channel. Dent disease produces nephrolithiasis.

174. d) Hypophosphatemia is produced by volume expansion from any cause (e.g., hyperaldosteronism, SIADH) that inhibits reabsorption of phosphorus in the proximal tubule. Thiazide and loop diuretics can increase renal phosphorus excretion. Glucose infusion stimulates insulin release that moves phosphorus into cells and hypophosphatemia.

175. c) Primary hyperparathyroidism is absent after kidney transplantation. The hypophosphatemia after kidney transplantation usually resolves in a few months.

176. a) Patients with progeria have normal motor and mental developments. They are not sexually mature and are unable to reproduce due to severe failure to thrive. Paternal age is significantly increased.

177. b) Children with progeria have severe atherosclerosis and death occurs due to complications of cardiac or cerebrovascular disease.

178. e) Hyperinsulinism

179. e) Anabolic effects of insulin in utero.

180. e) Patients with adrenal insufficiency have history of severe hypoglycemia with missed meals. They will have other features of adrenal insufficiency and may have electrolyte imbalance.

181. a) Patients with hyperinsulinemia have history of recurrent severe hypoglycemia due to highly elevated plasma insulin levels. Answers (b), (c), (d), and (e) have decreased plasma insulin levels after fasting.

182. d) Patients with hypopituitarism have history of moderate hypoglycemia with missed meals. They have features of hypopituitarism.

183. b) Patients with ketotic hypoglycemia have history of severe hypoglycemia with missed meals. They have large amount of reducing sugars and ketonuria.

184. c) Patients with fatty acid oxidation disorder have history of severe hypoglycemia with missed meals. They have mild hepatomegaly with abnormal liver function test results. They have no ketonuria and absence of reducing substance in urine like hyperinsulinemia (i.e., answer a). Answers (b), (d), and (e) have ketonuria and reducing sugars in urine.

185. e) Erythroid precursors near the pronormoblast stage.

186. b) Erythema infectiosum (or fifth disease) is the most common clinical manifestation of parvovirus B19 infection. Answer (a), (c), (d), and (e) are less common manifestations of parvovirus B19 infection.

187. e) **Chronic anemia**, sometimes associated with neutropenia, thrombocytopenia, or complete marrow suppression.

188. e) Anti-B19 IgM is the best marker. Serologic diagnosis is not reliable in immunocompromised patients. They require methods to detect viral DNA. Parvovirus B19 cannot be isolated by culture.

189. b) Herpetic gladiatorum occurs during contact sports (e.g., wrestling, rugby). Herpetic infections of superficial abrasions are called herpetic gladiatorum.

190. c) Herpetic whitlow. These lesions resolve spontaneously within 2-3 weeks. These skin lesions should not be incised because incision can cause systemic spread.

191. c) 104 mg/dL.

$$\begin{aligned} \text{LDL cholesterol} &= \text{total cholesterol} - [\text{HDL cholesterol} + (\frac{\text{triglyceride}}{5})] \\ &= 200-[74 + (110/5)] \\ &= 200-96 \\ &=104 \text{ mg/dL} \end{aligned}$$

192. d) Dietary modification i.e., their daily food intake should not provide more than 30% of total calories as fat (approximately equal amount of saturated, monosaturated, and polysaturated fats), and no more than 100 mg cholesterol/1,000 calories (maximum 300 mg/day).This diet is called Step I diet from American Heart Association. The ideal goal is to lower LDL cholesterol less than 110 mg/dl, but the minimal goal is to lower it less than 130 mg/ld.

193. e) Lowers LDL cholesterol levels by no more then 10-15%

194. a) The dietary management is safe in children older than 2 year of age. Children younger than 2 years need large amount of calories to maintain their rapid growth. Some authorities have demonstrated that a lower fat diet can maintain normal growth in children as young as 6 month old

195. e) Mild obesity is not a risk factor. However, severe obesity and low HDL cholesterol levels are also risk factors.

196. b) Bile acid-binding resins (e.g., cholestyramine, colestipol, colesevelam) primarily reduce LDL cholesterol levels in plasma. However, they can enhance hypertriglyceridemia in children with triglyceride levels grater than 300 mg/dL. Answers (a), (c), and (d) are also lipid-lowering medications.

197. e) Phenytoin does not increase triglyceride levels. Other drugs that raise triglyceride levels are steroids, immunosuppressants, and some beta-adrenegic blocking agents.

198. a) Hyperthyroidism is not associated with hyperlipidemia. Other conditions associated with hyperlipidemia are hypothyroidism, storage diseases (e.g., Tay-Sachs disease, Niemann-Pick disease, glycogen storage disease), hepatitis, systemic lupus erythematosus, and excessive alcohol intake (in teenagers).

199. a) General pediatrician should refer all children who need drug therapy to a specialized pediatric lipid center. Drug therapy is also indicated when LDL cholesterol level is greater than 160 mg/dl in children with smoking and physical inactivity.

200. e) Menarche usually occurs about 2.3 years after the initiation of puberty.

201. e) Multicystic dysplastic kidney

202. e) Horseshoe kidneys are present in 30% cases of Turner syndrome.

203. c) Wilms tumor (or nephroblastoma)

204. e) Developmental dysplasia of hip is usually not associated with renal anomalies. Renal sonogram is also indicated in an abnormality of an organ system (e.g., congenital heart disease).

205. c) Ascending infection (i.e., fecal flora spread through urethra into the urinary bladder, then spread through ureters into kidney).

206. c) Trimethoprim-sulfamethoxazole, trimethoprim, or nitrofurantoin is commonly used, once daily at a dose of one fourth to one third of the dose needed to treat an acute infection.

207. e) 6-7 years. However, grade V reflux rarely resolves. Prophylactic antibiotic therapy should be continued until reflux resolves or until the risk of reflux is considered to be low.

208. b) Pulmonary complications. About 30% of long-term survivors develop end-stage renal disease from dysplasia, reflux, or complications of infections. They need renal transplantation.

209. d) Malrotation.

210. c) Urethral trauma, either iatrogenic (e.g., catheterization, endoscopic procedure, previous urethral reconstruction) or accidental (e.g., straddle injuries, pelvic fractures).

211. c) Urethral atresia causes distended bladder, hydroureteronephrosis, oligohydramnios, and pulmonary hypoplasia. Most patients are treated with continent urinary diversion because urethral reconstruction is difficult.

212. a) Posterior urethral valve. About 30% of patients develop end-stage renal disease or chronic renal insufficiency. Posterior urethral valves when detected in the second trimester have a poorer outcome than those detected after birth.

213. e) Prostatic urethra is usually dilated. Anterior urethra may be dilated. Urethral stenosis or atresia occurs rarely. Patients have varying degrees of renal dysplasia. The other two features of this triad syndrome is deficient abdominal muscles and undescended testes.

214. e) Smith-Lemli-Opitz syndrome. This is the characteristic presentation of this syndrome.

215. a) Autosomal recessive

216. a) Pyloric stenosis is associated with type I; answers (b), (c), (d) and (e) are noted in Smith-Lemli-Opitz type II disease.

217. a) Hirschsprung disease is associated with type II.

218. e) Abnormal androgen receptor gene is located in **X chromosome (Xq)** in patients with complete AIS (androgen insensitivity syndrome) (phenotypic females) and partial AIS (males with various forms of ambiguous genitalia and undervirilization). Patients with AIS have a 46, XY chromosome. Reifenstein syndrome, Gilbert-Dreyfuss syndrome, and Lubs syndrome are partial AIS.

219. e) The testes are usually intra-abdominal but may descend into the inguinal canal, and mostly consist of seminiferous tubules. They have a 46, XY chromosome (i.e., genotypic male) but they are phenotypic females. Their adult heights are comparable with normal males despite congenital androgen insensitivity. **Osteopenia** is a feature in patients with AIS.

220. e) Resistance to the action of endogenous or exogenous testosterone **at the cellular level** resulting in absence of androgenic effects. Mullerian ducts are absent due to the production of AMH.

221. e) Testes should be removed as soon as they are detected in patients with complete AIS whose sexual orientation is absolutely female.

222. e) Testicular seminoma.

223. c) In patients with moderate diabetic ketoacidosis, venous pH is 7.15-7.25 and venous $CO_2$ is 10-15 mEq/L.

224. a) In patients with severe diabetic ketoacidosis, venous pH is less than 7.15 and venous $CO_2$ is less than 10 mEq/L. Severe hypernatremia (corrected sodium more than 150 mEq/L) would be classified as severe DKA. The patients may have Kussmaul breathing and coma.

225. a) Beta-adrenergic blockers may produce nonketotic hyperosmolar coma by blunting lipolysis.

226. b) Hyperosmolarity blunts the lipolytic effects of epinephrine and the antilipolytic effects of residual insulin. Nonketotic hyperosmolar coma can be produced by blunting lipolysis.

227. d) CNS. With progression of nonketotic hyperosmolar coma, thirst is impaired due to alteration of hypothalamic center by hyperosmolarity and in some patients, there is a pre-existing defect in the hypothalamic osmoregulating mechanism.

228. e) Patients with nonketotic hyperosmolar coma usually have grand mal seizures, hyperthermia, hemiparesis, and positive Babinski signs. They have absence of or only slight ketosis and nonketotic acidosis.

229. a) Intravenous regular insulin is given (0.05 U/kg/hour) rather than 0.1 U/kg/hour that is used in DKA (diabetic ketoacidosis).

230. b) When the fasting blood glucose is elevated, evening dose of long-acting insulin is increased by 10-15% and /or insulin (lispro or aspart) dose for bedtime snack may be necessary. Ideally, the blood glucose levels should range from approximately 80 mg/dL in the fasting state to 140 mg/dL after meals. However, in practice a range of blood glucose levels 60-220 mg/dL is acceptable, based on age of the patient.

231. d) When the noon blood glucose is elevated, the morning dose of fast-acting insulin (e.g., lispro or aspart) is increased by 10-15%. Blood glucose should be measured three to four times daily (e.g., before breakfast, lunch and supper, and at bedtime).

232. c) If the presupper blood glucose level is elevated, the noon dose of fast –acting insulin is increased by 10-15%.

233. a) If the prebedtime blood glucose level is elevated, the presupper dose of fast-acting insulin is increased by 10-15%.

234. c) If the fasting blood glucose level is decreased, the evening dose of long-acting insulin is decreased by 10-15%.

235. b) If the noon blood glucose level is decreased, the morning dose of fast-acting insulin is decreased by 10-15%.

236. d) If the presupper blood glucose level is decreased, the noon dose of fast-acting insulin is decreased by 10-15%.

237. a) If the prebedtime blood glucose level is decreased, the presupper dose of fast-acting insulin is decreased by 10-15%.

238. b) 55% carbohydrate, 30% fat, and 15% protein.

239. c) Carbohydrate counting. Each carbohydrate exchange unit is 15 grams.

240. c) Diabetic nephropathy.

241. a) Sorbitol and xylitol should **not** be used as artificial sweetners. They are products of polyol pathway and can cause some complications in patients with diabetes.

242. b) The Somogyi phenomenon is characterized by high morning glucose levels that are rebound from late night or early morning hypoglycemia.

243. c) The dawn phenomenon is characterized by high blood glucose levels in the early morning before breakfast and is mainly due to overnight growth hormone secretion and increased insulin clearance.

244. a) The brittle diabetes is characterized by wide fluctuations in blood glucose levels.

245. e) Fracture of the orbital floor. The characteristic feature is limitation of upward gaze.

246. e) The Waters' view is the preferred diagnostic study for orbital floor and maxillary sinuses.

247. e) Local injection of corticosteroids is not indicated.

248. c) HDR syndrome includes sensorineural deafness.

249. a) Cataracts

250. c) The serum magnesium level is normal in patients with hypoparathyroidism but should always be checked. The serum level of alkaline phophatase is normal or low. The serum level of 1, 25$[OH]_2$ $D_3$ is usually low, but high levels have been reported in some children with severe hypocalcemia. The QT intervals are prolonged on the EKG in patients with hypocalcemia.

251. d) The preferred therapy is intravenous injection of 5-10 mL of a 10% solution of calcium gluconate at a rate of 0.5-1 mL/min while the heart rate is monitored. In addition to that, calcitriol (1, 25-dihydroxycholecalciferol) should be given. When serum calcium level becomes normal, vitamin D2 may be used because it is less expensive than calcitriol. However, the reversal of hypercalcemia after discontinuation of vitamin D2 is severely delayed. After the emergency therapy, adequate intake of oral calcium should be given. Answer (a) or (b) can be used, but is rarely necessary. Foods with a high phosphorus content (e.g., milk, cheese, eggs) should be reduced in the meal.

252. b) Pseudohypoparathyroidism(Albright hereditary osteodystrophy) type 1A. This is a characteristic presentation, especially those who are diagnosed late. In contrast to patients with hypoparathyroidism, patients with pseudohypoparathyroidsm have normal or hyperplastic parathyroid glands. Serum levels of immunoreactive PTH are increased even when the patient is hypocalcemic and may be increased when the patient is normocalcemic. Endogenous or exogenous PTH does not raise the serum calcium levels and does not lowers the serum phophorus levels.

253. e) Demonstration of the mutated G protein. They have a genetic defect of the alpha subunit of the stimulatory guanine nucleotide-binding protein. Answer (a) and (b) are noted in these patients with pseudohypoparathyroidism. Answer (c) is wrong. Answer (d) is noted in patients with pseudopseudohypoparathyroidism.

254. d) Mutated G protein is not maternally transmitted. However, mutated G protein is maternally transmitted in patients with type Ia pseudohypoparathyroidism.

255. d) $L_3$-$L_4$ or $L_4$-$L_5$

256. c) 60-180 mm of fluid. However, the opening pressure in the recumbent and relaxed position is about 100 mm of fluid.

257. e) CSF lymphocytosis is not present in bacterial meningitis. CSF lymphocytosis is also noted in patients with brain tumor, demyelinating diseases, immunologic disorders including collagen vascular disease, and chemical irritation (e.g., intrathecal methotrexate, postmyelogram). The patients with bacterial meningitis or early phase of an aseptic meningitis have elevated polymorphonuclear leukocytosis.

258. b) Between the 3rd and 4th week in utero development.

259. a) Neural tube defects (e.g., spina bifida, meningocele, meningomyelocele, anencephaly, teethered cord, dermal sinus).

260. e) L5 –S1

261. e) Lumbosacral (75% of cases)

262. e) Hydrocephalus in association with a type II Chiari defect.

263. a) Surgery can be delayed for several days except when there is a CSF leak. A multidisciplinary team includes surgeon, physician, therapist, and one individual (e.g., pediatrician, nurse) acting as the advocate. Evaluation of other congenital anomalies (e.g., renal, dislocated hips, hydrocephalus) are indicated.

264. e) Anencephaly.

265. e) Meckel-gruber syndrome is an autosomal recessive condition. Other clinical features of this syndrome are cleft lip or palate, abnormal genitalia, and polydactyly.

266. d) 4%

267. d) 10%

268. b) Polyhydramnios (50% of cases)

269. a) CMV (50% of cases) causes bilateral sensorineural hearing loss. Ganciclovir therapy can stabilize or improve the hearing loss in very young infants with congenital CMV infections. Answers (b), (c), (d) and (e) also cause sensorineural hearing loss.

270. b) In patients with osteogenesis imperfecta, the hearing loss is most commonly conductive because of ossicular abnormalities, but sensorineural hearing loss can occur.

271. b) Osteopetrosis causes conductive hearing loss due to involvement of middle ear and ossicles.

272. b) Osteosclerosis causes conductive hearing loss due to fixation of the stapes in the oval window, but sensorineural hearing loss may develop.

273. a) Labyrinthitis causes sensorineural hearing loss. Labyrinthitis is a complication of direct spread of infection from acute or chronic otitis media, mastoiditis, and bacterial meningitis.

274. a) Toxoplasmosis causes sensorineural hearing loss. Fetal therapy may prevent some of the clinical manifestations, including sensorineural hearing loss.

275. e) Perilymphatic fistula may occur after sudden barotrauma or an increase in CSF pressure. This condition is characterized by sudden onset of vertigo or sensorineural hearing loss after physical exertion, severe head trauma, air travel, deep water diving, or playing a wind instrument due to leak at the oval or round window.

276. a) Immediate surgical repair is indicated to control vertigo and to stop the progression of sensorineural hearing loss.

277. a) Battle sign(postauricular ecchymosis) is a characteristic finding in patients with longitudinal temporal bone fracture. Children are prone to basilar skull fracture, which usually involves the temporal bone. Longitudinal temporal bone fracture ( upto 80% of cases) are more common than transverse temporal bone fracture. Other clinical feature of longitudinal temporal bone fracture is bleeding from a laceration of the external canal or tympanic membrane. Answer (c) occurs due to tympanic membrane perforation, hemotympanum, or ossicular injury. Answer (d) is due to CSF running down the eustachian tube. Answer (e) usually improves spontaneously.

278. a) Transverse temporal bone fractures are often associated with immediate facial paralysis. Other clinical features are vomiting associated with a loss of cochlear and vestibular function; hemotympanum; CSF otorrhea and CSF may exit the nose via the eustachian tube; rarely, external auditory canal bleeding. Transverse temporal bone fractures have a graver prognosis than longitudinal temporal bone fractures.

279. a) Recombinant human growth bormone increases height velocity and ultimate stature in most children, but not all children. Growth hormone therapy should be initiated in early childhood and/or when there is evidence of reduced growth velocity. Estrogen therapy may resume at 12-13 years of age. However, estrogen therapy may be delayed until 14 -15 years of age to achieve greater heights.

280. b) Staphylococcus aureus is the most common organism. Answer (a) can also occur.

281. e) Sitz baths and cleaning with povidone-iodine solution once or twice a day. If there is no response, answer (a), (b), or (c) is used.

282. c) Types 16 and 18. Types 31 and 45 also causes cervical neoplasia.

283. e) Hemorrhage into adrenal glands should be suspected in a patient with difficult delivery (e.g., breech presentation) and appears with an abdominal mass, unexplained jaundice, anemia, or scrotal hematoma. Patients may be asymptomatic. Subsequently, they develop calcifications of the adrenal glands.

284. d) Hyperglycemia does **not** occur in patients with primary adrenal insufficiency. They have hypoglycemia, elevated blood urea nitrogen due to dehydration, elevated plasma renin activity, increased blood eosinophil levels, and decreased serum cortisol levels.

285. e) Male infants with CAH appear normal at birth. However, female infants with CAH have ambiguous genitalia at birth.

286. e) Posterior fossa lesions do not cause Horner syndrome. However, this syndrome is also produced by a lesion in the middle fossa or orbit.

287. e) Trisomy 21 is not an etiologic factor in Horner syndrome. Other causes of Horner syndrome are unknown and familial.

288. d) Klumpke brachial palsy. Congenital Horner syndrome may be associated with vertebral anomalies or enterogenous cysts.

289. e) The cocaine test (i.e., instillation of 1 or 2 drops of 4% cocaine) results in dilatation of a normal pupil within 20-45 minutes. However, the cocaine test does not or poorly dilates a pupil in patients with Horner syndrome.

290. e) Instillation of a cycloplegic agent (e.g., atropine and related substance) is the most common cause of a dilated pupil. Answers (a), (b), (c), and (d) also cause a dilated pupil due to involvement of third cranial nerve.

291. c) Telangiectatic osteosarcoma can mimic an aneurysmal bone cyst because of its lytic appearance.

292. b) Parosteal osteosarcoma is a low-grade, well-differentiated tumor, most commonly found in the posterior aspect of the distal femur, does not invade the medullary cavity, can be cured with surgical resection.

293. a) Periosteal osteosarcoma is a rare variant, arises on the surface of the bone, and has increased rate of metastatic spread.

294. (c) Initial chemotherapy is to treat micrometastatic disease and is followed by limb salvage operation in majority of patients. Lung metastasis should be removed by surgery. Patients should use crutches before surgery to avoid a pathological fracture.

295. c) Hemangioma

296. d) This is a wrong answer because hemangiomas grow rapidly during the first year of life. Answer (e) is the true manifestation of hemangiomas.

297. c) Head and neck

298. e) Kasabach-Merritt syndrome

299. d) MRI of the spine can detect the underlying asymptomatic neurologic abnormalities of the spinal cord.

300. e) Reassurance. The therapy is indicated for hemangiomas those are life threatening or are involving the vision. The initial therapy includes oral prednisone or interferon-alpha. Laser therapy is also used in some conditions.

301. c) Heparin therapy is contraindicated in patients with Kasabach-Merritt syndrome. Platelet transfusions should be avoided except in life-threatening hemorrhage because they may exacerbate the bleeding. Tranexamic acid may be useful therapy. If all these therapies fail, use irradiation, embolization, or surgical resection.

302. c) Seizure, answers (a), (b), and (e) are other clinical manifestations.

303. a) Renal disease (e.g., acute glomerulonephritis, chronic pyelonephritis, end-stage renal disease)

304. d) Muscle biopsy, the vastus lateralis (quadriceps femoris) muscle is most commonly used for biopsy.

305. e) Glaucoma (75% of cases), answer (a) is found in 20% of cases, answers (b), (c), and (d) are also noted in patients with aniridia.

306. a) Macular and optic nerve hypoplasia cause decreased vision (i.e., 20/200 in most patients) and sensory nystagmus. Answers (b), (c), (d) and (e) are also noted in patients with aniridia.

307. a) Reading, most patients also have poor writing ability. Dyslexia should be differentiated from secondary reading difficulties (e.g., opthalmologic lesions, mental retardation, and educational deprivation).

308. d) Comparing reading ability with intelligence and appropriate reading expectations.

309. a) Absence of red blood cell casts in urine. Gross or microscopic hematuria can occur after heavy exercise. This is a benign condition. Hematuria usually resolves 48 hours after cessation of exercise.

310. c) Presence of white blood cell casts indicates renal involvements.

311. b) Autosomal dominant polycystic kidney disease

312. e) Mitral valve prolapse (12% of cases), hernias, intestinal divercula, and cysts in other organs (e.g., liver, spleen, pancreas, ovaries) may be noted.

313. d) Chromosome 16

314. b) Nasolacrimal massage, usually 2-3 times per day, and cleansing of the lid with warm water are the treatment of choice in patients with congenital nasolacrimal duct obstruction. Most cases resolve spontaneously by 1 year of age.

315. (e) Probing of the left nasolacrimal duct may be necessary after 1 year of age when medical management failed to improve the condition. Topical antibiotics are used when there is significant mucopurulent discharge.

316. b) Chlamydia trachomatis

317. a) Staphylococcus aureus. Hordeolum is the infection of the glands of the eyelid.

318. d) Laser therapy is not indicated. Answers (a), (b) and (c) are usually necessary Answer (e) is required in cases of cellulitis of the lid or orbit.

319. e) Observation because spontaneous regression can occur. Corticosteroids, interferon, or laser therapy is indicated in patients with rapidly expanding lesions resulting in visual difficulties or astigmatism.

320. d) Fifth cranial nerve or trigeminal area.

321. e) Flashlamp-pumped-pulsed dye laser. Answers (a), (b), (c), and (d) may be used.

322. e) Hemangiomas.

323. e) Hyperglycemia does not stimulate vasopressin secretion. Other stimuli for vasopressin secretion include hypoglycemia and nausea.

324. d) Water intake and excretion

325. d) Sodium intake and excretion

326. c) Vasopressin

327. e) Renin-angiotensin-aldosterone system along with both vasopressin and the atrial natriuretic peptide.

328. a) ANP inhibits sodium resorption. ANP is isolated from atrial muscles and is also expressed in brain. Natriuresis is excessive loss of cation, especially sodium.

329. a) ANP is released in CHF (congestive heart failure), hypervolemia, and stretching of atrial muscles.

330. a) Renal water retention

331. a) Addiction does not occur with typical ADD (attention-deficit / hyperactivity disorder) dosing. Growth retardation is controversial but minimal if occurs. Methylphenydate can cause agitation.

332. e) Amitriptyline is used for neuropathic or chronic pain or migraine prophylaxis. Amitriptyline facilitates sleep, can enhance opiod effects, and can be used in sickle cell pain.

333. b) ECG is performed to check for normal QTc before therapy. Amitriptyline can cause cardiac conduction abnormalities.

334. e) Amitryptyline also causes postural hypotension, headache, confusion, drowsiness, sedation, palpatitions, and urinary retention.

335. d) Abrupt discontinuation of amitriptyline therapy may cause withdrawal syndrome.

336. e) Shunt colonization with symptoms (e.g., lethargy, vomiting, headache, low-grade fever, and a full fontanel) that indicate shunt malfunction as opposed to shunt infection. Answers (b) and (c) are common in ventriculoatrial (VA) shunt. Hemiplegia does not occur. High-grade fever is less common.

337. e) Child does not have ear pathology because ear pulling alone is not diagnostic of ear pathology. In young infants, ear pulling or rubbing when associated with fever, irritability, or poor sleep usually indicates ear pain secondary to otitis media.

338. e) Tinnitis is common in patients with sensorineural hearing loss or with eustchian tube-middle-ear disease.

339. b) Vertigo causes dysequilibrium in young children. Older-children with vertigo complain of room-spinning or turning. Vertigo is a specific type of dizziness. Vertigo is a sensation of motion, illusion, or hallucination.

340. e) Eustachian tube-middle-ear disease. Answers (a), (b), (c), and (d) cause true vertigo.

341. e) Facial nerve paralysis does not cause true vertigo.

342. e) Ramsay Hunt syndrome (herpes zoster oticus) causes facial nerve paralysis.

343. a) Forcep delivery causes compression neuropathy of the facial nerve that recovers completely in a few days or weeks in most cases.

344. d) Mobius syndrome is caused by symmetric calcified infarcts in the tegmentum of the pons and medulla oblongata during midgestation or late fetal life. This syndrome usually causes bilateral facial palsy than unilateral facial palsy.

345. c) External otitis (or otitis externa). The severity of the pain and tenderness is usually more than the inflammation, because the skin of the external ear canal is closely attached to the underlying perichondrium and periosteum.

346. d) Fungal infection is treated with clotrimazole or nystalin solution. Fungal external otitis has a characterisitic fluffy white debris and sometimes with black spores. Fungal infections do not respond to antibiotics (e.g., tobramycin, floxin).

347. a) Topical otic preparations containing neosporin with either colistin or polymyxin, and corticosteriods. Neosporin covers gram-positive organisms and some gram-negative organisms (especially Proteus species). Colistin or polymyxin covers gram-negative organisms (especially Pseudomonas species). Corticosteroids reduce acute inflammation.

348. a) Dilute alcohol or acetic acid (2%) should be applied immediately after swimming or bathing.

349. (d) Benign neoplasms (e.g., adenomas, colloid nodule, ectopic thyroid, thyroglossal duct cyst). Malignant tumors are only 15% of all tumors.

350. a) Hemorrhage

351. a) Euthyroid

352. e) Hyperthyroidism. Many infants are premature and have IUGR. These clinical manifestations are characteristics of hyperthyroidism. Neonatal hyperthyroidism can occur without evidence of autoimmune disease in infant and mother. Cocaine does not have withdrawal symptoms. Patients with meningitis, encephalitis, or subarachnoid hemorrhage appear with lethargy. They do not present with tachycardia.

353. e) Mutation of TSH receptor (TSHR) gene, which causes activation of the TSH receptor.

354. e) Radioiodine or surgery is the preferred therapy in children who experienced recurrence after discontinuation of antithyroid medication.

355. d) LGA (large for gestational age). Hyperthyroidism causes IUGR (intrauterine growth retardation).

356. e) Lumbosacral agenesis and cardiac anomalies are most common. Answers (a), (b), (c) and (d) are also noted in IDM. Cardiomegaly (30% of cases) is the most common cardiac manifestation.

357. d) Small heart size is the wrong answer. Other cardiac anomalies are coarctation of the aorta, double-outlet right ventricle, asymmetric septal hypertrophy, and cardiomegaly.

358. d) Digoxin. Inotropic agents should not be used because they increase obstruction. Inotropic agents are digoxin, dopamine, dobutamine, epinephrine, isoproterenol, and amrinone.

359. a) Hyperinsulinemia is the main cause of hypoglycemia. Other causes of hypoglycemia are diminished epinephrine and glucagon responses. Cortisol and human growth hormone levels are normal.

360. d) Hyperinsulinemia causes hypolgycemia in about 50% cases of Beckwith-Wiedemann syndrome. Hyperinsulinemia is due to diffuse islet cell **hyperplasias**.

361. e) Tethered cord. This is a characteristic presentation of tethered cord in infants.

362. b) MRI of the spinal cord. This is a characteristic presentation in children with tethered cords.

363. e) At or below the level of L2. In a fetus, spinal cord occupies the entire length of vertebral column and ultimately assumes a position at the level of L1 in children.

364. e) Surgical transection of the thickened filum terminale halt the progression of neurologic manifestations and prevents the development of neurologic dysfunction in asymptomatic patients.

365. c) Staphylococcus aureus is the most common organism in brain abscess resulting from penetrating injuries. Answers (a), (b), (d), and (e) cause brain abscess.

366. a) Anaerobic bacteria

367. b) Sinusitis or orbital cellulitis

368. b) Chronic otitis media and mastoiditis

369. a) Lumbar puncture is contraindicated in cerebellar abscess and cerebral abscess because lumbar puncture may cause herniation of cerebellar tonsils. The child has (R) cerebellar abscess that is characterized by the clinical manifestation of nystagmus, ipsillateral (R) ataxia and dysmetria. **MRI is the preferred diagnostic study**. MRI demonstrates an abscess capsule with gadolinium administration.

370. a) Head CT scan and MRI are the preferred diagnostic studies for cerebral abscess. A contrast CT scan reveals a ring-enhancing lesion in cerebral abscess. The child has temporal lobe abscess secondary to inadequate treatment for an ear infection. EEG reveals focal slowing. Radionuclide brain scan indicates area of enhancement (80% of cases) due to disruption of blood-brain barrier. CSF is contraindicated. SMA6 reveals electrolyte imbalance.

371. a) For an unknown brain abscess, a third-generation cephalosporin (e.g., cefotaxime, ceftriaxone) and metronidazole are used initially. Antibiotics should be altered according to culture and sensitivity results.

372. b) For history of head trauma or neurosurgery, nafcillin or vancomycin with a third-generation cephalosporin and metronidazole are used. The same therapy is indicated for a penetrating head injury.

373. c) For cyanotic cardiac lesion (e.g., Tetralogy of Fallot), penicillin and metronidazole are used.

374. d) For an infected ventriculoperitoneal shunt, vancomycin and ceftazidime are used.

375. e) For an otitis media, sinusitis, or mastoiditis, vancomycin, a third-generation cephalosporin, and metronidazole are used.

376. a) For Citrobacter meningitis (occur in neonates), third-generation cephalosporin and aminoglycoside are used.

377. e) Surgery is indicated when the abscess is larger than 2.5 cm in diameter. Most patients do not require surgical therapy.

378. c) 4-6 weeks

379. a) Opthalmology consultation is indicated because the child has hyphema (i.e., presence of blood in the anterior chamber). Answers (b), (c), (d) and (e) are usual therapies for hyphema. However, a pediatrician should refer the case to an opthalmologist.

380. c) There is an increased incidence of glaucoma in patients with traumatic hyphema.

381. d) Patients with sickle cell disease or trait are at higher risk for acute loss of vision and rebleeding. These patients require aggressive therapy.

382. b) The absence of diarrhea and the presence of normal stool do not exclude malabsorptive disorder.

383 e) Decreased weight is followed by deceleration in height velocity. Head circumference is normal until malnutrition becomes chronic.

384. a) Microscopic examination of stool for fat is the most useful screening test for malabsorption. The test is performed by mixing a small amount of stool with several drops of water or Sudan III stain. The test is reported abnormal when there is presence of six to eight droplets per low-power field.

385. c) A 72-hour quantitative fecal fat test is the gold standard for assessing steatorrhea. Malabsorption is suggested when there is excretion of **more than 7%** of the total fat intake that is abnormal. A dietary record of fat intake is important. Pancreatic insufficiency causes steatorrhea.

386. e) Fat intake minus fat excretion, divided by fat intake, and multiplied by 100 (e.g., fat intake is 50 g, fat excretion is 20 g,
(50-20) / 50 x 100 = 30 / 50 x 100 = 60%
i.e., 60% is absorbed and 40% is excreted). Excretion more than 7% is abnormal.

387. e) Skull x-ray reveals fracture of the base of the skull and cribiform plate that produce anosmia. Anosmia is produced by frontal lobe tumor.

388. e) 32-week of gestation

389. d) Hyperoxia test (i.e., infant receives 100% oxygen and arterial blood gas is performed after 15-20 minutes). If the $Pao_2$ is above 150 mm Hg, cyanotic cardiac anomaly is probably excluded and pulmonary cause is most likely etiology of hypoxia. Echocardiogram is the best diagnostic study to diagnose cardiac anomaly.

390. c) Pulmonary disease because $Pao_2$ is more than 150 mm Hg.

391. a) Juvenile rheumatoid arthritis (systemic-onset disease). This is a characteristic clinical manifestation of systemic-onset JRA. Salmon-colored lesion is a faint, macular, erythematous rash.

392. e) Koebner phenomenon is suggestive but not diagnostic of systemic-onset JRA. Koebner phenomenon is also noted in psoriasis, lichen planus, and lichen nitidus.

393. d) Renal vein thromosis is diagnosed by sudden onset of gross hematuria and unilateral or bilateral flank masses.

394. c) Developmental conditions produce nonpainful or Trendelenburg gait.

395. c) Legg-Calve-Perthes disease (LCPD) and slipped capital femoral epiphysis (SCFE) produce antalgic (painful) gait. Congenital conditions are usually nonpainful except tarsal coalition (painful, rigid flat foot deformity and peroneal muscle spasms but without true spasticity) represents congenital fusion or failure of segmentation between two or more tarsal bones (e.g., talus, calcaneus, navicular).

396. b) 3 years of age (most of the adult gait patterns)

397. b) 7 years of age (similar to adult gait pattern)

398. e) Talipes equinovarus (clubfoot) produces in-toeing.

399. d) Calcaneovalgus feet produces out-toeing.

400. e) Plain x-ray, answers (a), (b), (c), and (d) are used as special procedures.

401. a) CT scan is preferred when plain x-ray is negative. CT scan is preferred for complex disorders of **pelvis, feet, and spine**. Bone scan can detect anatomy of bones and their surrounding structures. MRI studies are good for soft tissue structures. Ultrasonography does not penetrate the bones. Repeat plain x-ray does not make any sense, simply waste of time.

402. a) Fat and fibrous tissue

403. (b) Respiratory muscles. However, most children with arthrogryposis survive.

404. a) Amyoplasia is one major form of arthrogryposis multiplex congenita that involves both upper and lower extremities. Arthrogryposis (or amyoplasia) is the right answer. Other choices do not make sense.

405. e) Genetic consultation and musculoskeletal evaluation are indicated for all children with arthrogryposis.

406. a) Unknown, some patients have decreased number of anterior horn cells (i.e., neuropathic cause) and some have myopathic cause secondary to decreased fetal movement in utero.

407. a) Supracondylar fracture causes injury to the brachial artery resulting pale and coldness of the hand and to a lesser extent the median, radial, and ulnar nerves.

408. (e) Sciatic nerve injury

409. (a) Foot drop is due to common peroneal nerve or fibular nerve injury due to paralysis of the anterior leg muscles.

410. c) Tibial nerve injury causes unable to stand on the tip of the toe due to calf muscle paralysis.

411. b) Klumpke paralysis produces clawhand deformity due to injury at C8 and T1 of briachial plexus.

412. d) Long thoracic nerve injury produces winged scapula (i.e., vertebral border and inferior angle of scapula protrude posteriorly). The patient experiences difficulty in raising the arm above the head.

413. a) Radial nerve injury produces wrist drop or flexion of the wrist due to unopposed action of the flexor muscles of the wrist.

414. c) Median nerve injury produces flattened and ‘apelike’ hands and ‘carpal tunnel syndrome’ that represents burning and tingling sensation along the distribution of the median nerve (thumb, index, middle and adjacent part of ring fingers) and absence of paresthesia over the thenar eminence which is supplied by palmer cutaneous branch of median nerve.

415. e) Erb-Duchenne palsy occurs in newborns during a difficult delivery (e.g., breech) due to excessive traction or even tearing of the C5 and C6 roots of the brachial plexus.

416. b) Ulnar nerve injury at the elbow produces claw hand deformity especially at the ring and little fingers due to flexion of the interphalangeal joints and hyperextension of the metacarpophalangeal joints. There is wasting of hypothenar eminence and loss of skin sensation over the little finger and adjacent half of the ring finger. The patient is unable to grip a piece of paper between fingers because of inability to adduct and abduct the fingers.

417. d) Axillary nerve injury

418. a) Normal. The presence of patellofemoral crepitation is commonly noted in normal individuals and does not indicate underlying knee disease.

419. e) Idiopathic adolescent anterior knee pain syndrome. This is a characteristic clinical manifestations. Routine x-ray is not useful but it eliminates other causes.

420. d) Arthroscopic evaluation is **rarely** necessary. Strengthening exercises (isometric quadriceps) is also indicated.

421. b) Occult fracture presents with fat globules in aspirated blood.

422. a) Meniscal injury presents with recurrent effusions in knee joints.

423. c) Septic arthritis or osteomyelitis

424. a) Observation is preferred in children 10 years of age or younger with popliteal cyst because it resolves spontaneously. Surgery is indicated in patients with symptoms or progressively enlarging cyst.

425 e) Discoid lateral meniscus. This is a characteristic manifestation. A positive McMurray test (i.e., patient is supine, examiner standing on the side of the affected knee, examiner produces external rotation, valgus stress and extension) in which the displaced meniscus is both palpable and audible. MRI or athrography is preferred diagnostic study. Arthroscopic excision of tears and reshape of meniscus is the preferred therapy.

426. b) Osteochondritis dissecans. This is a characteristic manifestation. The cause is unknown. Bone adjacent to the articular cartilage becomes avascular and ultimately separates from the underlying bone. Anteroposterior, lateral and tunnel x-ray of the knee is the diagnostic study. MRI is useful.

427. e) In children 11 years and younger, the preferred therapy is observation, periodic radiographs and occasional MRI to detect the degree of healing. In adolescent 13 years of age and older, especially with a loose bone arthroscopic surgery is indicated.

428. b) Tibia and metatarsals are the most common sites of stress fracture.

429. b) Shin splints. This is a characteristic manifestation. Initially pain occurs towards the end of exercise, subsequently pain occurs during and after exercise. A large area (5-15 cm) of tenderness is absent in tibial stress fracture (about 2-5 cm) that produce tenderness over the bone that is absent in shin splints.

430. a) Bone scan is the preferred diagnostic study in patients with a stress fracture. Bone scan reveals a discrete tracer uptake at the site of fracture.

431. a) Shin splints may have fusiform pattern along the periosteal surface. However, bone scan is usually normal in shin splints and is abnormal in tibial fracture.

432. a) Analgesic medication is **not** used routinely for stress fracture but is used for shin splints. Orthopedic consultation is indicated in stress fracture of navicular bones, talus, proximal anterior third of the tibia, and femoral neck. Usually after 7-10 days, patients can resume walk-run program. Patients should be pain free before resume these activities. Ice can be used daily.

433. d) Medial collateral ligament sprains

434. b) Anterior cruciate ligament (ACL) sprains and meniscal tears occur by the same mechanisms. The anterior drawer test and Lachman test are performed to determine ACL injury.

435. c) Posterior cruciate ligament sprains.

436. e) Patellar dislocations, almost always dislocated laterally, may be associated with hemarthrosis.

437. a) Lateral collateral ligament sprains are associated with other injuries.

438. e) Patellar subluxation. Patellar dislocation may be associated with osteochondral fracture or hemarthrosis from capsular tearing.

439. a) Nonoperative therapy is indicated in majority of patients with acute patellar dislocations (e.g., immobilization with the knee in extension for approximately 6 weeks, isometric, straight leg-raising exercise should begin as soon as possible and continued until the knee is completely healed). Surgery is indicated when nonoperative therapy fails or in cases of recurrent dislocations. Other choices do not make any sense.

440. d) Hyperfibrinolysis. Leg-Calve-Perthes disease is associated with hypofibrinolysis.

441. e) Legg-Calve-Perthes disease is more common in males than females (4-5:1) .

442. e) Legg-Calve-Perthes disease. Most patients have mild or intermittent pain in the anterior thigh and limp. The classic presentation is “painless limp”.

443. e) Ateroposterior and Lauenstein (frog) lateral radiographs reveal collapsed and dense capital femoral epiphysis with early fragmentation suggest Legg-Calve-Perthes disease. Other choices are not needed to make the diagnosis.

444. e) Stable slipped capital femoral epiphysis (SCFE) is the most common type. In unstable SCFE, patients have severe pain and physical examination is limited due to pain in the hip.

445. a) Increased growth hormone levels are noted in tall, thin adolescents with SCFE.

446. b) Decreased level of sex hormones are noted in obese adolescent with SCFE.

447. a) Reassurance. The normal thoracic kyphosis is 40 degrees or less.

448. e) Thoracic kyphosis greater than 60 degrees in immature patients require Milwaukee brace. Immature patients with mild deformity may benefit from hyperextension exercise program.

449. a) Surgical correction is indicated in patients with painful, severe kyphotic deformity greater than 90 degrees.

450. d) Surgical intervention is indicated before complications developed. Brace therapy is not effective.
451. a) Paraplegia may develop due to compression of the spinal cord against the apex of the deformity.
452. a) First trimester (0-12 weeks)
453 e) Back pain in children is a serious entity and is frequently due to an organic cause. A careful history and physical examination is mandatory.
454. a) Children younger than 4 years of age are more likely to have a tumor. Persistent or increasing pain is an important sign.
455. e) L5 vertebra. Spondylolysis means defects in the pars interarticularis. Spondylolysis when associated with the forward slip of the affected vertebra, then it is called spondylolisthesis.
456. a) Spondylolysis usually present with low back pain and hamstring muscle spasm. Spondylolysis can occur due to **repeated flexion exercises** (e.g., rowing boat, diving, or gymnastics). Physical examination usually reveals limitation of lumbar flexibility and tight hamstring muscles.
457. d) Spondylolisthesis may be associated with scoliosis. The forward bend test should be performed to rule out scoliosis.
458. b) In spondylolisthesis, lumbar lordosis is reduced.
459. d) Disk space infection occurs early (about 2 years of age), absence of fever, mildly elevated WBC count, and no bone destruction. However, osteomyelitis occurs about 7 years of age and presence of fever, **leukocytosis**, and bone destruction.
460. c) Technitium bone scan and MRI can detect disk space infection early. Plain x-ray lags behind clinical symptoms.
461. b) MRI study can distinguish between disk space infection (diskitis) and vertebral osteomyelitis. MRI also shows paravertebral inflammatory mass in diskitis.
462. e) Staphylococcus aureus
463. a) Vancomycin is used to cover Staphylococcus aureus. Minimum duration of therapy is 4-6 weeks. Aspiration needle biopsy by CT guidance is indicated in patients who are unresponsive to antibiotic therapy. Surgical drainage is indicated in patients who develop abscess.
464. a) Smaller size of spinal canal.
465. e) Intervertebral disk herniation. This is a characterisitic clinical manifestations.
466. d) MRI
467. e) Bed rest is followed by gradual resumption of activities. Surgical excision is indicated when there is loss of reflexes or weakness in extremities.
468. d) Back pain, answers (a), (c) and (e) appear later. MRI is the preferred diagnostic study for spinal cord tumor. Bone scan is the preferred diagnostic study for vertebral column tumor.
469. a) Muscular torticollis.
470. a) LGA infants with vertex delivery, breech presentation, or hip dysplasia are at risk for torticollis.
471. e) Injury to the sternomastoid muscles results in bleeding, increased pressure, focal ischemia, fibrosis, contracture, and swelling of the muscle. Swelling diminishes shortly after birth. However, contracture results in head tilt and rotation.
472. e) Gentle passive stretching exercise started within the first month of life often results in resolution.
473. c) Rotate the chin gently toward the side of the head tilt and simultaneously bring the head to the upright position. When the range of motion improves, the chin can be rotated passed neutral and the head tilted toward the opposite side.
474. e) Congenital malformation of the cervical spine.
475. b) Anteroposterior and lateral cervical spine x-rays reveal cervical bone defects resulting in torticollis. **Please remember**, passive exercise can damage the cervical spinal cord resulting in paralysis, respiratory failure, and death.
476. e) Trauma and inflammation of the cervical muscles seconding to upper respiratory illness are the most common causes. However, answers (a) and (b) are the most serious causes of torticollis in children. A careful evaluation is indicated.

477. e) Cerebellar tumor. MRI is the preferred diagnostic procedure. Other choices do not make any sense.

478. c) A hard collar should not be used. The child can used soft collar. Diazepam (muscle relaxant) may be required.

479. a) Sprengel anomaly (congenital elevation of the scapula) and affected patients have higher incidence of scoliosis.

480. d) Mental retardation is not a component of the triad. Answer (a), (b), and a combination of (c) and (e) produce triad of Klippel-Feil syndrome. Torticollis may be present.

481. e) Eye anomaly is usually not associated.

482. e) Radiographs of the cervical spine (anteroposterior, lateral, and oblique view) should be performed initially.

483. e) Evaluation of the genitourinary tract (e.g., ultrasonography) is indicated in all patients. About 30 to 40% patients have structural renal anomalies (e.g., double collecting system, horseshoe kidney, renal aplasia). They can develop recurrent pyelonephritis and uremia.

484. a) Flexion and extension occurs between occiput-C1; rotational movements occur between C1-C2 joints.

485. e) Absence or rudimentary odontoid process is noted in Morquio syndrome.

486. e) Cervical stabilization is indicated in all patients with Morquio syndrome.

487. e) Restriction of contact sports and close observation are indicated in normal asymptomatic patients without radiographic evidence of instability but with hypoplasia of the odontoid process.

488. e) The decision should be made on a case-by-case basis.

489. e) Genetic. Many factors can cause depression but genetic factor can cause major depression throughout life.

490. a) Children do not report sadness but they show irritability.

491. a) Hallucinations are common in children.

492. d) Delusions are common in adolescents and adults.

493. e) Clinical interviews with the child and many adults familiar with the child are the gold standard. Answers (a), (b), (c), and (d) are also important to make the diagnosis of depression.

494. a) Tricylic antidepressants (TCAs) (e.g., desipramine, imipramine) should not be given in children because overdose can cause death. Depression is strongly associated with suicidal attempts. Answers (d) and (e) are SSRI (selective serotonin reuptake inhibitors).

495. a) Thyroid hormone unresponsiveness is associated with ADHD (attention-deficit hyperactivity disorder). But the converse is not true. ADHD patients do not have increased resistance to thyroid hormones.

496. a) Most patients are clinically enthyroid. Patients are resistance to the action of endogenous and exogenous T4 and T3. They are erroneously diagnosed to have a Graves disease.

497. b) Methylphenydate and its derivatives (e.g., Ritalin, Concerta, Methylin, and Metadate CD) and amphetamine and its derivatives (e.g., Dexedrine, Adderall). All of them are stimulants. Answer (e) is considered second-line agents used for ADHD especially with co-morbid depression. Answer (d) can be used alone or in combination with stimulants. TCAs are imipramine and desipramine. Alpha-2 adrenergic blocker is clonidine (Catapres) and guanfacine (Tenex). Stimulants treat the core symptoms of ADHD. Psychosocial interventions and behavior management training help in co-morbid disorders of ADHD.

498. d) Stimulants (e.g., Ritalin) does not improve reading skills, academic achievements, and antisocial behaviors. However, stimulants also improve impulsive aggression, accuracy, academic productivity, and social interactions.

499. a) Stimulants cause mild tachycardia and initial weight loss.

500. a) Stimulants do not cause addiction, aggressive behaviors, and anxiety disorders.

501. e) Reduce the dose, switch to another stimulant, or switch to another class of medication. Stimulants produce tics rarely.

502. a) Symptoms must begin before the age 7 years. DSM-IV creteria were developed with children 5 to 12 years of age.

503. e) Maternal use of phenytoin during pregnancy does not produce ADHD in children. Other etiologic factors of ADHD are damage to CNS (e.g., trauma, after infections), mental retardation, lead toxicity, strong family history, twin, and also physically healthy children.

504. b) Aggressive children with ADHD may develop oppositional defiant disorder and/or conduct disorder. Other choices are wrong.

505. e) Gilles de la Tourette syndrome is characterized by **motor and vocal tics**. Physicians can make the diagnosis from history. Rarely, they use obscene words. **First-degree relatives** are more commonly involved. More common in **whites** and in **boys** than in other races and girls. This syndrome has higher incidence of ADHD, obsessive-compulsive disorder (OCD), and oppositional-defiant disorders.

506. e) Gilles de la Tourette syndrome has a dysfunction in dopamine receptors in severely affected children.

507. e) After the age of 6 years, episodes of self-poisoning is less likely to be accidental. The child really attempted suicide. She has history of sexual abuse and possible neglect. Physicians should take her case seriously.

508. a) Males complete suicide than that of females. Suicide increases steadily across the teen years, peaking in early 20s. In USA, suicides are underreported. Males predominates females when age increases from puberty to late adolescence (from 3 : 1 to 4.5 : 1). About 25% of adolescents admit to suicidal ideation.

509. c) The physician should enter into a no-suicide contract with the patient. About 50% of suicide attempters do not have a single psychiatric consultation. Physicians should make an arrangment for a psyciatric consultation preferable on the same day. Social worker should be involved. A patient belongs to hostile and angry family or has family problems should be admitted to hospital.

510. d) Hemangioma. This is characteristic presentation. This is a rare, benign tumor. Blood loss could be chronic and subtle. About 50% of patients have cutaneous hemangiomas. They may have a positive family history. Answers (a), (b), (c), and (e) do not produce life threatening rectal bleeding. About 50% hemangiomas are located in the colon.

511. e) Selective mesenteric arteriography can detect the location of hemangioma. Colonoscoy can detect the hemangioma if it is located in the colon. A capsule-size ingested camera can detect the lesions those are difficult to locate.

512. a) Juvenile colonic polyp

513. a) Iron deficiency anemia is absent initially but develops subsequently in 30% of cases.

514. c) Intussusception should be ruled out.

515. d) Colonoscopic biopsy confirms the diagnosis.

516. e) Removal of the polyps at colonsocpy by snare cautery and biopsy. Answer (a) is rarely indicated. Other choices do not make sense.

517. e) Juvenile colonic polyps without potential for malignant changes. **When there is no adenomatous changes**, **no risk for malignancy**.

518. e) Familal adenomatous polyposis coli (including Gardner and Turcot syndromes) have 100% risk of malignancy. They have mutations of APC (adenomatous polyposis coli) gene localized to chromosome 5q21. Answer (a) has 50% chance of malignancy. Answer (b) has an increased risk of malignancy. Answer (c) has an uncertain risk of malignancy. Answer (d) and single common juvenile polyp have no risk of malignancy. Answers (a), (b), (c) and (d) are hamartomas. Answer (e) is adenoma.

519. c) Gardner syndrome

520. b) Turcot syndrome

521. a) Peutz-Jeghers syndrome

522. d) Cowden syndrome

523. e) Bannayan-Riley-Ruvalcaba syndrome . Both (d) and (e) have an increased risk of thyroid and breast cancers.

524. b) Both CS and BRRS syndromes have mutations of a tumor suppressor gene. Answer (a) is noted in familial adenomatous polyposis coli (including Gardner and Turcot syndromes). Answer (c) is noted in familial adenomatous polyposis coli. Answer (d) is noted in Peutz-Jeghers syndrome. Answer (e) is noted in carcinoid tumors.

525. a) Mumps, measles, and rubella are live-attenuated vaccines. **Oral polio** is also a live vaccine and is not used in USA. **Varicella** vaccine is a live virus vaccine.

526. e) Capsular polysaccharides conjugated to carrier proteins are Hib and pneumococcal conjugate vaccine.

527. d) Polysachharides is capsular meningococcal vaccine.

528. c) Inactivated or killed vaccine is whole cell pertussis and hepatitis A vaccines.

529. b) Purified protein antigens are acellular pertussis and hepatitis B vaccine.

530. a) Detoxified exotoxins are tetanus and diptheria toxoid.

531. e) Components of the organism (e.g., subunit influenza vaccine).

532. a) MMR (live-attenuated vaccine) is given twice (1st dose is between 12-15 months and the 2nd dose is between 4-6 years). Live-attenuated vaccines are more effective than killed vaccine and simulate response to natural infections. Therefore, less number of booster doses are required in MMR vaccines.

533. e) True contraindications of DTaP administration are encephalopathy (e.g., prolonged seizures, decreased level of consciousness and coma) within 7 days of administration of DTP or DTaP, severe allergic reaction after a previous dose or to a vaccine component, progressive neurologic disorders (e.g., infantile spasms, uncontrolled epilepsy, progressive encephalopathy).

534. d) Progressive encephalopathy is a contraindication to DTP or DTaP administration.

535. a) Anaphylactic reaction (i.e., severe allergic reaction) after a previous dose of DTaP or to a vaccine component is a contraindication to DTaP administration. Moderate or severe acute illness with or without fever is not a contraindication to DTaP administration.

536. e) A child who has personal or family history seizure at the time of DTaP administration should receive acetaminophen or ibuprofen at the time of DTaP administration and every 4-6 hours thereafter to reduce the chance of fever.

537. a) Prophylaxis is not recommend for all medical personnel **except those with intimate exposure (e.g., mouth-to-mouth resucitation, intubation or suctioning) before antibiotic therapy was started**.

538. e) Meningococcal meningitis should be ruled out in close contacts of patients with meningococcal disease when they develop fever.

539. a) Penicillin therapy does not eradicate nasopharyngeal carrier.

540. a) Meningococcal vaccine is not reliable in children younger than 2 years of age. This vaccine is recommended in children with complement component deficiencies or anatomic asplenia after 2 years of age.

541. b) Valproate produces fatal hepatoxicity in children younger than 2 years of age.

542. d) Prolonged anticonvulsant prophylaxis is not indicated for prevention of recurrent febrile seizures. Phenobarbital can be used in preventing recurrent febrile seizures. But it decreases cognitive functions. For anxious parents, at the onset of each febrile illness, oral diazepam (0.3 mg/kg/dose every 8 hour, 1 mg/kg/day) is used for the duration of illness (i.e., 2-3 days). Phenytoin and carbamazepine are not effective in febrile seizures.

543. c) Ataxia, lethargy, and irritability are the side effects of diazepam. The dose should be reduced in symptomatic patients.

544. e) Sydenham chorea is the only neurologic manifestation of rheumatic fever.

545. c) Autoimmune response of the CNS to **Group A Streptococci.** Most patients with Syndeham chorea have **antineuronal antibodies** those cross react with the cytoplasm of the subthalamic and caudate nuclei neurons, and cerebral cortex resulting in **vasculitis** of the cortical arterioles with round cell infiltration of the gray and white matter. **Chorea is a functional overreactivity of the dopaminergic system**.

546. e) A rapid and jerky movement in the face, trunk, and distal extremities and dart from one muscle group to another is noted in Sydenham chorea. **Symptoms increase with stress and disappear with sleep**. Hypotonia may leads to difficulty in walking, feeding, and dressing. Patients may have uncontrolable crying and severe mood swings.

547. b) Diazepam is the preferred therapy for incapacitating patients with Sydenham chorea. Mild cases are treated with avoidance of stress. If the patient does not respond to diazepam, use answer (c), (d), or (e).

548. c) Tardive dyskinesia is characterized by stereotypical facial movements (e.g. lip smacking, protrusion and retraction of the tongue).

549. e) Jitteriness is **normal** in a full-term infant during a physical examination (e.g., **Moro response**) and when the infant is **crying**. Jitteriness is abnormal when the infant is awake and alert, and the tremor persists beyond the second week of life.

550. d) Hyerglycemia does not cause jitteriness. Other causes of jitteriness are hypoglycemia, hypocalcemia, and hypomagnesemia. Hyperglycemia is a sign of sepsis.

551. a) Extrapyramidal cerebral palsy is often manifested with athetosis (distal writhing movements of the extremities). Extrapyramidal CP is caused by asphyxia, glutaric aciduria, and kernicterus.

552. b) Phenothiazine (dopamine-blocking neuroleptic drug) causes athetosis.

553. c) Dystonia (sustained muscle contractions) occurs after injury to basal ganglia. Extrapyramidal CP with basal ganglia injury produce dystonia (e.g., asphyxia, glutaric aciduria, and kernicterus).

554. e) Gilles de la Tourette syndrome does not cause dystonia but produces **vocal tics**, including throat clearing, barking, sniffing, **coprolalia** (obscene words), **echolalia** (repetition of words addressed to the patient), **palilalia** (repitition of one's own word), and **echokinesis** (imitation of movement of others). Dystonia is also produced by perinatal asphyxia, kernicterus, and glutaric aciduria.

555. e) Hallervorden-Spatz disease is autosomal recessive and has "eyes-of -the-tiger" sign (vacuolation) noted in brain MRI.

556. b) Wilson disease is an autosomal recessive.

557. c) Segawa disease is dopa-responsive dystonia and is treated with levodopa.

558. d) Generalized primary dystonia (torsion dystonia, dystonia musculorum deformans) is due to genetic disorders.

559. a) Segmental dystonia (writer's cramp, blepharospasm, and buccomandibular dystonia).

560. e) Intravenous diphenhydramine (1-2 mg / kg/ dose) rapidly reverses dystonia caused by drugs.

561. a) Phenytoin and carbamazepine cause dystonia in patients with underlying structural abnormality of the brain.

562. e) Prematurity causes spastic diplegia (not athetoid CP). Athetoid CP is also produced by kernicterus due to high levels of bilirubin.

563. a) Thrombophilic disorders can cause stroke (in utero or neonatal) resulting in hemiplegia. Other causes are infection, periventricular hemorrhagic infarction, genetic and developental.

564. b) Surgical excision

565. e) Franceshetti or Treacher Collins syndrome produces lid coloboma.

566. b) Chalazion has no signs of acute inflammation unlike hordeolum (red, tender swelling). Ectropion is an eversion of the lid margin. Entropion is an inversion of the lid margin.

567. a) Many chalazion subsides spontaneously. Excision may be necessary for cosmetic reason or when the vision is affected.

568. e) Staphylococcal blepharitis has ulceration of the lid margin, loss of eye lashes, and associated with conjunctivitis and superficial keratitis.

569. e) Seborrheic scalp lesion is noted in seborrheic blepharitis. Both conditions should be treated simultaneously. Daily cleansing of scales and crusts is indicated.

570. e) Local application of antistaphylococcal antibiotic is used along with thorough daily cleansing of the lid margins with a cloth or moistened cotton applicator to remove scales and crusts.

571. e) Opthalmologic consultation is indicated.

572. b) Thyrotoxicosis is characterized by the three clinical signs.

573. d) Syndrome of Sylvian aqueduct has lid retractions and obstructive hydrocephalus.

574. e) Paradoxical retraction of the lid is noted in the Marcus Gunn jaw-winking syndrome and after a recovery from 3rd cranial nerve palsy due to aberrant regeneration of the oculomotor (3rd cranial) nerve factors.

575 a) Normal infants have "eye popping" as a startle response or due to sudden reduction in light.

576. c) Involvement of the anterior mesencephalon produces neurogenic retraction of the lids.

577. a) Idiopathic (90% of cases) nephrotic syndrome includes minimal change disease (85%), focal segmental glomerulosclerosis (10%), and mesangial proliferation (5%)

578. a) E. coli is the 2nd among the common organisms causing peritonitis in nephrotic syndrome. Streptococcus pneumoniae is the most common organism.

579. a)

580. b)
581. c)
582. d)
583. e)
584. e) Liver transaminase levels are normal or mildly elevated. Gout rarely develops before puberty. Intermittent diarrhea can occur but the reason is unknown. Easy brusing and epistaxis are common.
585. a) In type I glycogen storage disease, impaired platelet aggregation and adhesion resulting in prolonged bleeding time.
586. e) Triglyceride elevation causes “milky” appearance. Cholesterol and phospholipids are also elevated.
587. e) Biopsy of the liver reveals deficiency of either glucose-6-phosphatase activity or translocase.
588. a) Nasogastric drip feeding containing elemental enteral formula or glucose or glucose polymer during the night. Frequent feedings with high carbohydrate content are provided during the day. Ringer lactate solution contains lactose (not glucose) and should be avoided. Fructose and galactose are not converted to glucose and should be avoided. Answer (b) is not practical therapy. **Uncooked cornstarch** can be used and it acts as a slow-release form of glucose (1.6 g/kg body weight every 4 hours for children younger than 2 years of age, 1.75 to 2.5 g/kg body weight, every 6 hours for older children).
589. e) Orthotopic liver transplantation is the curative therapy. Allopurinol is used to control hyperuricemia. Citrate supplement can prevent or reduce nephrocalcinosis. 1-deamino-8-D-arginine vasopression can reduce bleeding complications. Answer (d) is used in type Ib glycogen storage disease.
590. e) ABG in BPD patients usually reveals baseline hypoxemia (requiring oxygen to maintain oxygen saturation above 90%), elevated bicarbonate level, and elevated $\text{Pco}_2$ level (due to chronic respiratory insufficiency).
591. c) Respiratory acidosis and metabolic alkalosis are noted in patients with BPD.
592. c) Fluid should be restricted along with high calorie intake in patients with BPD. Gastroesophageal reflux is common in patients with BPD. Inhaled glucocorticoids can be used in young children with BPD.
593. a) BPD with concomitant airway malacia usually worsen with beta-agonist therapy because beta-agonist relaxes bronchial smooth muscles resulting in airway collapse due to airway malacia.
594. b) Synagis vaccine should be given to prevent RSV infectins to all premature babies with or without BPD.
595. e) Triglyceride levels are elevated in chylous fluid. Cholesterol levels are elevated in chronic serous effusions.
596. e) More than 50% of cases recover spontaneously. Repeated aspirations may be needed to release the pressure. However, chyle accumulates rapidly and repeated aspirations cause loss of calories, protein, and lymphocytes.
597. c) Salt restrictions are required in most patients. Fat soluble vitamins (A, D, E and K) should be added.
598. e) Surgical ligation of the thoracic duct is preferred definitive therapy.
599. a) Brain swelling (or cerebral edema) is due to the movement of water from the serum into the brain cells to equalize the osmolality between brain cells and plasma.
600. a) Opthalmopathy in Graves disease is due to **antibodies against antigens** shared by thyroid and eye muscles. TSH receptors are noted in retroorbital adipocytes. The antibodies that bind to the extraocular muscles and orbital fibroblasts stimulate the formation of **glycosaminoglycans** by orbital fibroblasts and cause cytotoxic effects on orbital muscle cells resulting in opthalmopathy.
601. e) Throglossal duct cyst often appears after on URI unlike branchial cyst.
602. b) Second branchial cleft cyst is the most common, may open onto the skin or drain into the pharynx, unilateral or bilateral, autosomal dominant.
603. d) Systemic antibiotic therapy
604. c) Normochromic and normocytic anemia is noted in patients with chronic renal failure.
605. e) In patients with chronic renal failure (CRF), serum cholesterol and triglyceride levels are elevated. The urinalysis in CRF with glomerulonephritis reveals hematuria and proteinuria. The urinalysis in CRF with congenital lesions reveal low specific gravity and minimal abnormalities.
606. e) Renal biopsy

607. a) Uric acid crystals cause obstruction of the renal tubules in tumor lysis syndrome that is a specific form of acute renal failure related to either spontaneous or chemotherapy-induced cell lysis in patients with lyphoproliferative malignancies.

608. a) Aspirin is contraindicated in children less than 16 years of age with chickenpox or flu-like symptoms due to the risk of Reye syndrome.

609. b) Aspirin causes hearing loss (not hyperacusis). Discontinue aspirin if hearing loss or tinnitus occurs.

610. c) 2 hours after a dose. It is the same in Kawasaki disease.

611. a) First, respiratory alkalosis due to direct stimulation of the respiratory center and compensatory alkaluria, both potassium and sodium bicarbonate are excreted in the urine, when sufficient potassium has been lost, then there is an exchange of potassium for hydrogen ion and the urine becomes acidic i.e. "paradoxical aciduria". **Finally, dehydration and metabolic acidosis** caused by accumulation of lactic and other metabolic acids.

612. a) Sodium. However, glucose and urea have a little contribution to the plasma osmolality.

613. e) Hyperglycemia, elevated urea levels, and most importantly hypernatremia increase plasma osmolality.

614. c) In DKA, a shift of water from the intracellular space to the extracellular space resulting in dilution of the sodium to the extracellular space, causing hyponatremia despite an elevated plasma osmolality.

615. d) 131. The formula to calculate the corrected sodium (Na) is:

Corrected (Na) = measured (Na) + 1.6 x (glucose-100 mg/dL)/100

$$\begin{aligned} &= 125 + 1.6 \times (500-100) / 100 \\ &= 125 + 1.6 \times 4 \\ &= 125 + 6.4 \\ &= 131.4 \end{aligned}$$

616. e) Blood urea nitrogen (BUN)

617. e) Poisoning with methanol, ethanol, or ethylene glycol. Use of mannitol can produce osmolar gap. Answers (a), (b), (c), and (d) have a normal osmolar gap.

618. a) Pseudohyponatremia is characterized by normal osmolality and lower serum sodium. Serum sodium is low due to elevated serum proteins and lipids. Water is also decreased by the displacement of water by the increased serum proteins and lipids. **Sodium is decreased in relation to serum but the sodium is normal in relation to serum water**. The later is important physiologically.

Answer (b) has low sodium and low osmolality.

Answer (c) has high sodium and high osmolality.

Answer (d) has low sodium and low osmolality.

Answer (e) has low sodium and low osmolality.

619. e) ADH (antidiuretic hormone) is secreted by neurons in the supraoptic and paraventricular nuclei in the hypothalamus.

620. a) ADH acts on collecting ducts of kidneys for water absorption. ADH stimulates sodium transport in the loops of Henle.

621. b) ADH acts on $V_2$ receptors in the collecting duct cells of the kidney and via the generation of **cAMP** (cyclic adenosine monophosphate), causes insertion of **aquaporin-2** (water channels) into the collecting ducts resulting in increased absorption of water.

622. a) 1% increase of plasma osmolality resulting in slowly increased secretion of ADH. ADH secretion is adjusted gradually (**not** all or none response).

623. b) Increased thirst and increased ADH secretion occur when the plasma volume is depleted regardless of plasma osmolality. **"The appropriate secretion of ADH"** occurs when volume depletion takes precedence over the osmolality in the regulation of ADH.

624. e) Anticholinergics do not increase ADH secretions.

625. e) In SIADH, plasma volume is normal or slightly elevated.

626. e) Excess administration of vasopressin in the treatment of central diabetes insidpidus causes SIADH in children. Answer (a), (b), (c), (d), pneumonia, prolonged nausea, tuberculoous meningitis, posticical period after generalized seizures, and psychiatric disease can cause SIADH.

627. d) SIADH (35% of cases) occurs 1 week after hypothalamic-pituitary surgery due to vasopressin release and retrograde neuronal degeneration and cell death.
628. d) Phenobarbital does not increase vasopressin secretion.
629. b) Furosemide inhibits sodium and chloride reabsorption at the ascending loop of Henle and distal tubule.
630. c) Gastroenteritis. Volume depletion occurs when loss of sodium is more than intake. Answers (a), (b), (d), and (e) also cause volume depletion. Answer (e) can occur due to neglect, famine, or intake of only liquid diet containing no sodium.
631. c) Intracellular space. In SIADH or water intoxication, there is high urine sodium concentration despite hyponatremia.
632. d) CAH has decreased aldosterone secretion that is due to 21-hydroxylase deficiency.
633. e) Cerebral salt wasting due to the brain natriuretic peptide that produces volume depletion due to the renal loss of sodium.
634. c) Diuretics cause iatrogenic renal sodium wasting.
635. a) Bartter syndrome has urinary loss of sodium that is due to tubular disorders.
636. b) Premature infants have inabilities to conserve sodium.
637. d) Gastroenteritis. Answers (a), (b), (c), and (e) produce edema formations.
638. a) Sodium balance. However, chloride depletion occurs in metabolic alkalosis with volume depletion.
639. d) The kidneys determine the sodium balance by alering the percentage of filtered sodium that is reabsorbed along the nephron. A normal kidney usually excrete **less than 1%** of the sodium filtered at the glomerulus.
640. c) Angiotensin II also stimulates aldosterone secretion and is also a vasoconstrictor and maintains the blood pressure. Aldosterone increases sodium reabsorptions and potassium excretions.
641. a) Sodium intoxication is frequently iatrogenic in the hospital during correction of metabolic acidosis with sodium bicarbonate.
642. e) Central pontine myelinolysis (CPM) produces neurologic symptoms (e.g., confusion, agitation, flaccid or spastic quadriparesis, and death). CPM and extrapontine myelinolysis can also occur in hypernatremia.
643. e) Dehydration and possibly hypercoagulability
644. e) A combination of sodium loss and water retention to compensate for the volume depletion.
645. a) The child will not develop hypernatremia because the sodium content of the formula is much less than the sodium loss in viral diarrhea. Hyponatremia causes volume depletion.
646. b) Volume depletion decreases GFR.
647. e) Thiazide diuretic concentrates the urine and can cause severe hyponatremia. Glucose acts as an osmotic diuretic in DKA resulting in loss of both water and sodium.
648. b) Urea accumulates in renal failure and then acts as an osmotic diuretic.
649. b) Pseudohypoaldosteronism has an elevated aldosterone level. There is no response due to a defect in sodium channel or lack of aldosterone receptors.
650. d) In CAH, aldosterone deficiency produces hyponatremia, hyperkalemia, and metabolic acidosis.
651. e) In type II RTA, there is an increased excretion of sodium and bicarbonate in the urine.
652. c) Acute tubulointerstitial nephritis can occur due to medication or infection, may cause salt wasting and other tubular dysfunctions.
653. a) Obstructive uropathy (e.g., posterior urethral valve) produces salt wasting but may also develop hypernatremia due to high water loss and impaired urinary concentrating ability.
654. a) “Beer potomania” is due to the inability to excrete high water load. Beer is a poor source of sodium and protein.
655. b) Glucocorticoid deficiency or hypothyroidism can cause hyponatremia. The exact mechanism is unknown but the inappropriate retention of water by the kidneys are noted.
656. d) Acute hyponatremia is due to a massive acute water load or water intoxication (e.g., child abuse i.e., forced water intake, infant swimming lessons, water enemas, and inappropriate hypotonic intravenous fluid).
657. e) Chronic hyponatremia occurs in children who received water but limited protein and sodium.

658. c) Hyponatremia in the hospital may be due to administration of hypotonic intravenous fluid or release of ADH secondary to stress.

659. b) Most of the symptoms of hyponatremia is due to the brain swelling from movements of water from the extracellular space to the intracellular space due to decreased extracellular osmolality.

660. a) Hyponatremia produces decreased reflexes, nausea, malaise, confusion, agitation, headache, **muscle weakness**, **muscle cramps**, and coma. Patients with chronic hyponatremia may be asymptomatic with a level of 110 mEq/L but patients with acute hyponatremia (i.e., drop from 140 to 125 mEq/L) develop convulsions.

661. d) Most common cause of hyperkalemia in children is hemolysis during phlebotomy, but can be due to prolonged tourniquet application, or fist clinching, which causes local potassium release from muscle.

662. d) Hyperkalemia causes lethal arrythmias.

663. a) Body potassium increases during puberty (especially boys) due to an increase in muscle mass.

664. a) Hyperkalemia stimulates insulin secretion that is a protective effect because insulin causes potassium to move into cells.

665. a) Alkaline pH causes hypokalemia (not hyperkalemia).

666. e) Renal failure causes hyperkalemia.

667. c) Gordon syndrome produces hyperkalemia due to impaired excretion of potassium.

668. e) Decreased renal excretion

669. a) Succinylcholine causes hyperkalemia.

670. e) Furosemide causes hypokalemia and hypercalcuria. Potassium-sparing diuretic causes hyperkalemia.

671. b) Gastroenteritis causes hypokalemia.

672. a) Premature neonates

673. e) Transient physiologic hypoparathyroidism (or early neonatal hypocalcemia) occurs during the first 3 days of life.

674. e) Early neonatal hypocalcemia is due to absence of transplacental delivery of calcium, relative hypoparathyroidism, and relative refractoriness of the target cells to parathyroid hormone.

675. c) Poor intestinal absorption of calcium

676. d) Decreased intestinal absorption of phosphorus due to the effect of PTH.

677. e) Wilson disease causes copper overload resulting in hypoparathyroidism.

678. a) Thalassemia causes iron overload due to multiple blood transfusions resulting in hypoparathyroidism.

679. c) Kearns-Sayre syndrome is a mitochondrially inherited disorder causes hypoparathyroidism.

680 b) During neck surgery blood supply to the parathyroid glands is disrupted resulting in hypoparathyroidism.

681. d) Radioactive iodine ablation of the thyroid gland for Graves disease may cause damage to the parathyroid glands.

682. e) **Glucocorticoids therapy** is useful because they inhibit the action of vitamin D on both bones and intestines and reduce the levels of 1, 25-dihydroxy vitamin D and 25-hydroxy vitamin D in the serum. **Specific therapy** includes discontinuation of vitamin D and a low-calcium diet.

683. a) Excessive intake is the most common cause of clinically significant hypermagnesemia (e.g., antacids, total parenteral nutrition; certain laxatives, enema, and cathratics are used to treat drug overdose; maternal use of magnesium sulfate for preeclampsia).

684. e) Mother received magnesium sulfate for preeclampsia.

685. e) Heart. A severe hypermagnesemia (more than 15 mg/dL) causes complete heart block and cardiac arrest. Initial changes are prolonged PR, QRS, and QT intervals.

686. e) Intravenous calcium gluconate (100 mg/kg) is used for cardiac manifestations. Answers (a), (b), (c), and (d) are also used to treat hypermagnesemia. Hemodialysis is more effective than peritoneal dialysis.

687. e) Reassurance. Most patients with normal renal functions excrete excessive magnesium. If the child is symptomatic, give intravenous hydration followed by furosemide therapy.

688. a) Kidneys

689. b) Increased urinary loss of phosphorus in patients with DKA.
690. e) Refeeding hypophosphatemia can be prevented with a gradual increase in nutrition and appropriate supplementation.
691. e) Lungs and kidneys
692. c) Intracellular pH. But we measure extracellular pH.
693. b) Furosemide causes metabolic alkalosis in patients with BPD that produces respiratory acidosis.
694. a) 12-24 hours by the lungs
695. c) 3-4 days by the kidneys
696. b) In acute respiratory alkalosis, bicarbonate falls by **2** for each 10 mm Hg decrease in the Pco$_2$.
697. e) In chronic respiratory acidosis, bicarbonate increases by **3.5** for each 10 mm Hg increase in the Pco$_2$.
698. d) In chronic respiratory alkalosis, bicarbonate falls by **4** for each 10 mm Hg decrease in the Pco$_2$.
699. c) In acute respiratory acidosis, bicarbonate increase by **1** for each 10 mm Hg increase in the Pco$_2$.
700. a) In metabolic alkalosis, Pco$_2$ increases by **7** mm Hg for each 10 mEq/L increase in the serum bicarbonate.
701. c) $20 \pm 2$, $\mathrm{Pco}_2 = 1.5 \text{ x Bicarbonate} + 8 \pm 2$
$= 1.5 \text{ x } 8 + 8 \pm 2$
$= 20 \pm 2$
702. c) Less than 20-30% of normal
703. b) Renal failure. Ethylene glycol, a component of **antifreeze**, is converted in the liver to glyoxylic acid and oxalic acid. Oxalate excretion in the kidney produces calcium oxalate precipitation in the kidney resulting in renal failure and metabolic acidosis.
704. a) Methanol toxicity produces formic acid in the liver. Formic acid causes metabolic acidosis and damage to the optic nerve and CNS.
705. a) Proximal RTA (part of Fanconi syndrome)
706. c) Distal RTA (hypokalemia, nephrocalcinosis, urine pH is more than 5.5).
707. b) Hyperkalemic RTA (aldosterone deficiency or unresponsiveness produces hyperkalemia).
708. e) Autosomal recessive distal RTA produces deafness and is more severe variety. Autosomal dominant is a mild variety and most patients are asymptomatic until adulthood.
709. a) Acetoacetic acid and beta-hydroxybutyric acid. Insulin administration converts these acids into bicarbonate that helps to correct the metabolic acidosis.
710. b) Acetone (a volatile ketone) is produced from acetoacetic acid. Acetone leaves the blood through lungs.
711. a) Salicylate intoxication causes fever. Chronic intoxication produces tinnitus, vertigo, and hearing loss. In children, metabolic acidosis is more common than respiratory alkalosis.
712. c) Hydrochloric acid (Hcl).
713. b) Metabolic alkalosis is chloride responsive and only corrects after adequate hydration.
714. a) Diuretic use causes ‘contraction alkalosis’. Answers (c) and (d) enhance renal acid excretion resulting in metabolic alkalosis.
715. c) Cystic fibrosis does not cause metabolic acidosis. The volume depletion causes respiratory alkalosis and hypokalemia due to urinary loss of potassium. Hyponatremia is due to loss of sodium chloride in sweat and renal water conservation to protect the intravascular volume (i.e., “appropriate” ADH secretion).
716. a) Urinary chloride level is more than 20 mEq/L. In absence of diuretic effect, urine chloride level is low (i.e., less than 15 mEq/L).
717. c) Measurement of the urinary chloride concentration (e.g., **the urine chloride is low in patient with a metabolic alkalosis resulting from volume depletion** unless there is a defect in renal excretion of chloride). The normal urinary response in patients with a metabolic alkalosis is to excrete bicarbonate (negatively charged) that is excreted along with cation (e.g., sodium and potassium). Therefore, sodium is excreted despite volume depletion and is not a reliable indicator to differentiate between different causes of metabolic alkalosis.
718. b) Diuretics and gastric losses. Answers (a), (c), (d), and (e) also cause metabolic alkalosis.
719. c) Baking soda ingestion causes hypernatremia and metabolic alkalois.

720. b) In Bartter and Gittelman syndromes, urine chloride is always elevated and have a normal blood pressure.

721. d) In bulimia, the patients have hypokemia, metabolic alkalosis, and low urine chloride concentration (due to volume loss).

722. e) In surreptitious diuretic use, the patients have hypokalemia, metabolic alkalosis, elevated urine chloride, and urine toxicology screen is positive for diuretic.

723. a) In cystic fibrosis, occasionally the initial manifestation is hypokalemia, metabolic alkalosis, and elevated sweat chloride test.

724. b) **Both renin and aldosterone levels are elevated** in patients with a renovascular disease or a renin-secreting tumor.

725. c) **Renin is low and aldosterone is high** in patients with adrenal adenomas or hyperplasia, and glucocorticoid-remediable aldosteronism.

726. a) **Both renin and aldosterone levels are low** in patients with Cushing syndrome, Liddle syndrome, licorice ingetion, and deficiencies of 17 alpha-hydroxylase, 11 beta-hydroxylase, 11 beta-hydroxysteriod dehydrogenase.

727. a) Alkalemia causes potassium moves into cells resulting in hypokalemia.

728. b) Acidemia causes potassium moves out of cells resulting in hyperkalemia.

729. e) Baking soda causes elevated sodium bicarbonate (each teaspoon has 42 mEq of sodium bicarbonate).

730. e) No intervention is indicated because the patient has mild metabolic alkalosis (i.e., bicarbonate level is less than 32).

731. d) Nasogastric suction should be stopped in a patient with worsening metabolic alkalosis (i.e., elevated serum bicarbonate level).

732. e) To treat the underlying cause. Answers (a), (b), and (d) cause metabolic alkalosis. The therapy for moderate to severe metabolic alkalosis includes discontinuation of nasogastric suction, gastric proton pump inhibitor (reduces gastric secretion and loss of Hcl), discontinue diuretics or use potassium-sparing diuretic, and occasionally, acetazolamide (carbonic anhydrase inhibitor) is used.

733. e) Start spironolactone (a potassium-sparing diuretic) because the child needs diuretic therapy. Potassium-sparing diuretics decrease renal potassium loss, block the action of aldosterone, decrease hydrogen ion secretion in the distal nephron, and increase urinary bicarbonate excretion. However, furosemide dose can be reduced along with potassium supplementation.

734. a) Blood, next common is lymphatic vessels.

735. d) Type I (immediate hypersensitivity reaction) occurs when a drug or drug metabolites interacts with the preformed drug-specific **IgE antibodies**. These IgE antibodies are bound to the surface of tissue mast cells and/or circulating basophills. They release **histamine and leukotrienes** resulting in the development of **urticaria, bronchospasm, or anaphylaxis**.

736. c) Type II (cytotoxic antibody reactions) involve **IgG or IgM antibodies,** they recognize drug antigens on cell membranes. In the presence of complement, these antibody coated cells are either cleared by monocyte-macrophage system or are destroyed (e.g., thrombocytopenia, drug-induced hemolytic anemia).

737. b) Type III (immune complex reactions) are due to soluble complexes of drugs or metabolites in slight antigen excess **with IgG or IgM antibodies**. These immune complexes are deposited in the wall of blood vessels and cause injury by activating the **complement cascade (e.g., serum sickness)**. Patients appear with **fever, utricaria, rash, arthralgias, and lymphadenopathies** 1-3 weeks after the last dose of the drug and subside when the drug is cleared from the body.

738. a) Type IV (delayed hypersensitivity reactions) are mediated by drug-specific **T lymphocytes**. Sensitization usually occurs via the topical route of administration (e.g., **allergic contact dermatitis from topical neosporin and local anesthetics, tuberculin test)**.

739. b) Delayed maculopapular reactions to a number of antibodies are due to T cells and eosinophils.

740. a) Morbiliform rash noted with ampicillin or amoxicillin therapy in EBV infection is due to an unknown reason (i.e., does not match with type I, II, III, and IV types).

741. a) Early phase response of allergic rhinitis is due to IgE mediated.

742. b) Late phase response of allergic rhinitis is due to T cell mediated (or Type IV Gell and Coombs classification).

743. b) Acetazolamide causes metabolic acidosis (not metabolic alkalosis), hypochloremia, nausea, anorexia, and fatigue.

744. c) Chloride-responsive metabolic alkalosis is treated with volume repletion with Nacl and Kcl.

745. b) Chloride-resistant metabolic alkalosis is associated with hypertension. Therefore, volume repletion is contraindicated because it increases hypertension and does not correct metabolic alkalosis.

746. a) Triamterene or amiloride is effective therapy in children with Liddle syndrome. These medications block of sodium channel that is active in Liddle syndrome. Spironolactone blocks mineralocorticoid receptors and is not effective in Liddle syndrome. This syndrome includes hypertension, hypokalemia, metabolic alkalosis, but low serum level of aldosterone.

747. c) Both Bartter and Gitelman syndromes have a normal blood pressure.

748. c) Both syndromes have hypokalemia, metabolic alkalosis, and volume loss.

749. a) Bartter syndrome has loss of sodium and chloride like patients on loop diuretics (e.g., furosemide).

750. b) Gitelman syndrome is a milder variety than Bartter syndrome. Gitelman syndrome has an absence of thiazide-sensitive sodium chloride transporter in the distal tubule.

751. b) Gitelman syndrome has hypocalciuria and hypomagnesemia. In Bartter syndrome, there is hypercalcuria and nephrocalcinosis, hypomagnesemia is uncommon but is due to a defect in the basolateral chloride channel.

752. a) Respiratory acidosis is produced by **narcotic overdose**, pulmonary disease (e.g., severe bronchiolitis, BPD, severe asthma attacks), CNS disease, a variety of medications and illicit drugs.

753. c) Hyperthyroidism (not hypothyroidism) causes increased carbon dioxide production.

754. a) In primary metabolic acidosis, despite a decrease in carbon dioxide concentration, appropriate respiratory compensation is **not** a respiratory alkalosis and erroniously should not be mentioned as “compensated respiratory alkalosis”. This is called an appropriate respiratory compensation in primary metabolic acidosis.

755. d) Respiratory alkalosis occurs in ECMO therapy, hemodialysis, and hyperventilation. In ECMO, carbon dioxide is lost directly from the blood in the extracorporeal circuit.

756. e) A rapid lowering of the carbon dioxide can cause severe metabolic alkalosis. The patient with chronic respiratory acidosis has an elevated bicarbonate level due to compensated metabolic alkalosis. Severe metabolic alkalosis can cause cardiac arrythmias, decreased cardiac output, and decreased cerebral blood flow.

757. a) Naloxone is used in patients with a narcotic overdose.

758. e) Hypercapnia causes vasodilatation, especially cerebral vessels. However, hypercapnea causes pulmonary vasoconstriction.

759. d) A-a gradient is 420 (i.e., alveolar oxygen gradient minus arterial oxygen gradient). Arterial $Po_2$ is 100 mm Hg.

Calculation of alveolar oxygen gradient:

$P_{AO2} = [F_{IO2}\ (Pb\text{-}PH_2O)]\text{-}(Paco_2 / R)$

$= [0.8\ (760\text{-}47)]\text{-}(40 / 0.8)$

$= (0.8 \times 713)\text{-}(50)$

$= 570\text{-}50$

$= 520$

($F_{IO2} = 0.8$ i.e., 80% oxygen, Pb is 760 i.e., barometric pressure, $PH_2O$ is 47 i.e., water vapor pressure, $Paco_2$ is 40, R is 0.8 i.e., respiratory quotient, $PAo_2$ = alveolar oxygen gradient).

A-a gradient = 520-100 = 420 mm Hg.

Normal A-a gradient in a healthy person is less than 10 mm Hg. If a person is receiving 100% oxygen ($F_{102}$ 1.0) and A-a gradient is more than 300 mm Hg, patient needs intubation.

760. e) Alveolar-arterial oxygen gradient that is increased in intrinsic lung disease unlike in poor respiratory effort.

761. a) Bradycardia is absent. Patient usually have palpitations. Less common findings are cramps, tetany, syncope, and seizures. The lightheadedness and syncope are due to the reduction in the cerebral blood

flow. The paresthethias, tetany, and seizures may be partially due to the decreased ionized calcium because alkalemia causes more calcium to bind with albumin.

762. e) Carbon monoxide poisoning, severe anemia, and congestive heart failure produce tissue hypoxia without hypoxemia.

763. a) Pulse oximetry measures real-time oxygen saturation and does not measure partial pressure of oxygen. Only ABG (arterial blood gas) is adequate to eliminate hypoxia as a cause of a respiratory alkalosis. **Pulse oximetry does not give direct measurements of $CO_2$ tension, bicarbonate level, or acid-base status.**

764. e) Rebreathing into a paper bag increases $Pco_2$ and adequate oxygenation. Plastic bag does not give adequate oxygenation. A high $Pco_2$ stops hyperventilation.

765. a) Reassurance. In addition to that, patients with psychogenic hyperventilation benefit from benzodiazepines therapy and rebreathing into a paper bag.

766. d) The patient will lose 0.5-1% of weight each day. Therefore, TPN (total parenteral nutrition) should be started for children who cannot be fed by month for more than a few days.

767. e) Bicarbonate should be given to avoid acidemia in patients with RTA.

768. b) Sickle cell crisis

769. a) Maintenance fluids usually do **not** contain protein, fat, minerals, vitamins, and adequate calories. Intralipid contains fat. TPN contains all other components except fat.

770. b) Maintenance fluids do not prevent vitamins and minerals deficiencies.

771. c) Glucose usually provides 20% of the total caloric needs in maintenance fluids (e.g., D5 or 5% dextrose provides 20 calories per 100 ml that is 20% of the daily caloric needs).

772. e) Normal saline or Ringer lactate is used for an acute correction of intravascular volume depletion.

773. b) D5 and ½ normal saline or D5 and ¼ normal saline, solutions may contain no potassium, 10 mEq/L potassium chloride, or 20 mEq/L potassium chloride.

774. a) D5 and ¼ normal saline plus 20 mEq/L Kcl are used in children **less than 25 kg** with a normal renal function.

775. a) D5 and ½ normal saline plus 20 mEq/L Kcl are used in children **more than 25 kg** with a normal renal function.

776. d) A humidified ventilator decreases insensible water loss from the lungs and increases water absorption from the lungs. Therefore, a ventilated patient needs less maintenance water. A **tracheotomy** increases evaporative water loss from the lungs. A persistent fever (not 1-hour spike in temperature) causes a **10-15% increase** in maintenance water needs for each 1°C increase in temperature above 38°C. Premature infants can have insensible water losses of 100-200 mL/kg/day.

777. a) Diarrhea causes metabolic acidosis due to a loss of bicarbonate in stools. In addition to that, dehydration produces hypoperfusion and lactic acidosis.

778. b) Emesis or losses from a nasogastric tube produces metabolic alkalosis and hypokalemia. Gastric fluid has high content of Hcl but low content of potassium (10 mEq/L).

779. b) Increased urinary losses of potassium are due to **aldosterone** secondary to volume depletion. Potassium moves into cells in metabolic alkalosis resulting in hypokalemia. There is a small amount of gastric loss of potassium as well.

780. e) Third space fluid losses are due to shift of fluid from the intravascular space to the interstitial space.

781. c) Normal saline or Ringer lactate

782. e) Normal saline or Ringer lactate

783. e) Acute tubular necrosis

784. d) Renal vein thrombosis

785. e) The child has an acute and severe dehydration. BUN and creatinine concentrations are dependent on the time of the disease process. The creatinine value will increase over time.

786. b) Moderate to severe dehydration. A urine specific gravity less than 1.020 indicates mild or no dehydration, or urine concentrating defects (e.g., chronic renal disease, primary or secondary diabetes insipidus). These findings usually improve with hydration and do not indicate significant renal pathology.

787. e) The child probably has an underlying anemia because dehydration increases the hemoglobin concentrations. Therefore, the hemoglobin is falsely elevated in severe dehydration.

788. e) In dehydration, hemoconcentration increases serum proteins, hemoglobin, and hematocrit.

789. e) Bradycardia is **not** a sign of dehydration. Other signs of dehydration are postural changes of blood pressure, tented skin remains in a pinched position rather than going back to normal position, and dry skin. Diaphoresis may be present. Tachycardia is due to intravascular volume depletion. Tachypnea is due to lactic acidosis from poor perfusion or secondary to a metabolic acidosis from stool losses of bicarbonate.

790. e) Dehydration usually causes decreased urine output. However, dehydration and good urine output are noted in salt wasting nephropathy, diabetes insipidus, or in infants with hypernatremic dehydration.

791. c) Appropriate weight gain indicates a successful therapy for dehydration.

792. e) Stop the maintenance sodium. Otherwise, sodium level will be 150 in the following day.

793. e) Sodium chloride is replaced by sodium bicarbonate or sodium acetate therapy. Answers (a), (b), (c), and (d) will cause hypernatremia, answer (a) will worsen metabolic acidosis.

794. d) Central pontine myelinolysis (CPM). The risk of CPM occurs due to overly rapid correction of the serum sodium (i.e., more than 12 mEq/L each 24 hours).There is no need to increase the sodium beyond 135.

795. c) 108; The formula to calculate the sodium deficit is:
Sodium deficit = 0.6 x body weight x (desired Na-actual Na)
= 0.6 x 15 x (135-123)
= 0.6 x 15 x 12
= 108

796. d) 3% sodium chloride should be given in patients with severe hyponatremia with seizures.

797. b) In isonatremic (or hyponatremic) dehydration, total fluid therapy should be given over 24 hours. Half of the total fluid should be given over the first 8 hours; previous boluses should be deducted from this volume. The remainder is given over the next 16 hours.

798. a) In hyponatremic dehydration, the initial therapy should be normal saline or Ringer Lactate. Then, sodium deficit and maintenance should be given over 24 hours.

799. e) In hypernatremic dehydration, movement of water from the brain cells into the extracellular fluid that is hypertonic resulting in brain cell **shrinkage** and tearing blood vessels within the brain.

800. e) In hypernatremic dehydration, children appear less ill because intravascular volume is protected (unlike isonatremic and hyponatremic dehydration) due to movement of water from the intracellular space to the extracellular space. Therefore, when the patients seek for medical attention, they are usually severely dehydrated.

801. e) Brain herniation, seizures, and death can occur due to cerebral edema when there is a rapid correction (i.e., more than 12 mEq/L every 24 hours) of hypernatremia secondary to movement of water from the extracellular space into the brain cells.

802. d) Idiogenic osmoles within the brain cells decreased slowly during a correction of hypernatremia. Idiogenic osmoles increase osmolality within the brain cells and provides protection against brain cell shrinkage. However, an osmotic gradient is created resulting in movement of water into the brain cells.

803. d) 2-4 days. The serum sodium should not decrease more than 12 mEq/L every 24 hours. A 24-hour-correction for Na 145-157; a 48-hour-correction for Na 158-170; a 72-hour-correction for Na 171-183; a 84-hour-correction for Na 184-196.

804. a) A neonate needs low sodium (D5 and ¼ normal saline plus Kcl 20 mEq/L) and more “free water” (e.g., ¼ normal saline has 75% free water; normal saline has no free water)

805. b) A 3 years old needs higher sodium than infants (D5 and ½ normal saline plus Kcl 20 mEq/L) and “free water” (e.g.,1/2 normal saline has 50% free water)

806. c) Diabetes insipidus needs a lower sodium than ¼ normal saline plus D5 and Kcl 20 mEq/L due to an excessive water loss through kidneys.

807. d) Diarrhea with sodium and water loss need a higher sodium concentration than ½ normal saline plus D5 and Kcl 20 mEq/L

808. e) Severe hypernatremia that is difficult to control is managed by two separate intravenous solutions (e.g., D5 and ½ normal saline; D5 and ¼ normal saline) plus Kcl 20 mEq/L should be started at the same time in two different sites. If the sodium is high, reduce ½ normal saline infusion and increase ¼ normal saline infusion, If the sodium is low just do the opposite.

809. b) 3% sodium chloride can reverse cerebral edema (usually 4-6 mL/kg is given; each mL/kg of 3% sodium chloride increases the serum sodium by 1 mEq/L. The same management is indicated in acute severe hyponatremia.

810. e) For mild to moderate dehydrations, oral rehydration therapy is preferred except in patients with uncontrolled vomiting and abdominal distension.

811. e) Epigastric discomfort is not an indication for intravenous hydration. In coma or severe dehydration, intravenous hydration is indicated.

812. a) Breast feeding should be continued.

813. b) Young infants who are not vomiting should receive cardohydrate and electrolyte mixture by mouth until 3 hours before surgery.

814. e) Surgery should be performed because patient's condition is getting worse. The serum electrolytes should be corrected. However, the patient's condition is much more important than serum electrolyte values.

815. d) 85 mL/100 Kcal metabolized; 24 hours restriction after surgery. Please remember, every patients are different. Each patient should be managed according to the clinical condition of the patient after the individual procedure.

816. d) Renal failure does not occur during surgery.

817. d) In malrotation, fluid should be restricted after surgery. Postoperative fluid should not be restricted in sickle cell disease, chronic pyelonephritis, and obstructive uropathy.

818. a) Pneumonia (3% of cases); aseptic meningitis (1.2% of cases); bacteremia (1% of cases); focal soft tissue infection (e.g., cellulitis, septic arthritis, and osteomyelitis; 1% of cases); UTI (0.8% of cases.)

819. e) Child's response to stimuli (e.g., crying, smiling, lethargy etc.)

820. e) Parent's reaction is not important to evaluate a child's condition. However, reaction to parent stimulation (e.g., crying stops when held) and response to social overtures (e.g., kissed, hugged) are important. State variation means going from awake to asleep and vice versa.

821. e) Meningitis produce paradoxic irritability because the child holds the neck stiff and becomes irritable even during cuddling.

822. c) Parvovirus produces "slapped-cheek" appearances.

823. b) Coxsackie virus produces hand-foot-and-mouth disease.

824. a) Diskitis or osteomyelitis produces tenderness at the spine.

825. d) Pyelonephritis produces tenderness at the costovertebral angle.

826. b) UTI should be ruled out when there is no obvious source of infection, especially all boys younger than 12 months of age; all girls and uncircumcised boys younger than 2 years of age. Urinalysis and urine culture should be performed.

827. e) UTI is confirmed by the positive urine culture. Answers (a), (b), and (c) suggest UTI. Answers (d) suggests a bacterial infection.

828. e) ANC (absolute nentrophil count) 10,000 or more indicates occult bacteremia caused by S. pneumonia. WBC counts more than 15,000 indicates S. pneumonia infection.

829. e) A febrile child older than 3 months and appears well can be followed up in the next day with appropriate instructions to the mother and the contact number. However, if the child is less than 3 months of age, management is highly controversial. Many physicians will perform sepsis work up. These who don't perform sepsis work up, should have an appropriate follow-up. Usually, a follow-up examination yields the diagnosis.

830. e) Follow-up the patient in the office or by telephone. The child has viral infection. The child looks healthy. All the laboratory tests are normal. Chest x-ray is normal.

831. a) Suffocation is even more common than MVA in this age group only (less than 1 year of age). After 1 year of age, MVA is the most common cause of death. Suffocation is mostly due to chocking on food items (e.g., hot dogs, nuts, candies, and grapes). Nonfood items (e.g., pacifiers, small balls, and latex balloons) can cause suffocation as well.

832. a) Firearms (60% of cases)

833. a) Most have rejected the theory of "accident-prone child.' This theory is counterproductive. There is no clear evidence that hyperactivity and impulsivity increase the risk of injuries.

834. c) The child should not be restrained.

835. e) Supervise the child closely, being careful, and 'childproofing' the home are nonspecific suggestions. These are less useful than that of specific suggestions mentioned in answers (a), (b), (c), and (d).

836. e) The most useful injury prevention strategies are changes in product design (e.g., airbags, child-resistant caps, and fire-safe cigarettes). Answers (a), (b), and (c) are useful environmental modifications to control injury. Answer (d), anticipatory guidance, and public service announcements are useful education to control injury.

837. d) Residential pools are the most common sites of drowning.

838. e) Circumferential fencing should restrict entry to the pool from the yard and residence, use self- closing and self-latching gates, at least 5 feet high; has no vertical opening more than 4 inches wide.

839. c) 5 years of age and after; before the age of 5 years they do not understand the consequences of fall into deep water and usually do not call for help.

840. a) Alcohol; the next important cause is using drugs. The restriction of the sale and consumption of alcoholic beverages are important to prevent drowning.

841. e) Shower. A patient with seizure can be drowned in the bathtub.

842. a) In homes with guns, the risk to the occupants is much greater than that of intruders.

843. e) First responders are law enforcement officers, firefighters, or community volunteers who are dispatched to give emergency medical assistance. EMTs are volunteers or paid professionals. Paramedics give highest level of EMT response.

844. a) Trisomy 8, mosaicism. This is a characteristic manifestation of trisomy 8.

845. e) Adenotonsillar hypertrophy. Answer (d) is noted in Down, Cruzon, and Apart syndromes.

846. a) Rapid eye movement (REM) sleep occurs about one fourth of a typical night sleep. During REM sleep, apnea frequency, apnea duration, and degree of hypoxia are severe in patients with OSA/H. Answer (b) is noted in Down syndrome.

847. d) More common in African-American race

848. e) Chronic hypoxia due to OSA/H causes pulmonary hypertension and right ventricular failure.

849. a) Habitual snoring is the most common symptom in patient with OSA/H. Please remember, not all children with snoring are at risk for the development of OSA/H. Most children with OSA/H breathe normally while awake. Answers (b), (c), (d), and (e) are all clinical manifestations in patients with OSA/H. Abnormal position during sleep (e.g., hyperextended neck or prone with the bottom up in the air) is required to maintain an upper airway.

850. e) Obstructive sleep apnea and hyperventilation

851. e) An overnight recording of multiple physiologic sensors during sleep is the gold standard for the diagnosis of OSA/H. Answers (c) and (d) are under investigation.

852. a) Anemia is not present. Polycythemia due to chronic hypoxia may be noted. Polycythemia and answer (d) support the diagnosis but are absent in majority of the pediatric patients.

853. a) Pulmonary hypertension, cor pulmonale, and failure to thrive are the most severe complications of OSA/H. Answers (b), (c), (d), and (e) are also complications of OSA/H. Most of the complications are reversible for children.

854. e) Depends on the underlying abnormalities (e.g, adenotonsillectomy is performed in patients with hypertrophied adenoid and tonsils; maxillomandibular reconstruction surgery for children with craniofacial disorders; nasal steroids can reduce snoring in some children; medroxyprogesterone acetate increases ventilatory drive but is effective only daytime hypoventilation associated with obesity-hypoventilation syndrome; nasal CPAP can be used in children in whom adenotonsillectomy failed; tracheotomy is indicated in severe cases.)

855. d) Pubertal development and growth are affected by medroxyprogesterone acetate. This medication is also used for an excessive menstrual bleeding, primary amenorrhea, and secondary amenorrhea.

856. e) Incomplete resolution (i.e., symptoms persist even after adenotonsillectomy) occurs in children who had onset of symptoms before 2 years of age.

857. e) Lymphoma; a rapid unilateral enlargement of one tonsil when associated with fever, weight loss, and lymphadenopathy, is highly indicative of tonsillar malignancy. Lymphoma is the most common malignancy of tonsil in children.

858. a) M protein produces resistance to phagocytosis by neutrophils.

859. e) Sinus aspirate culture is the only accurate method to diagnose sinusitis but is not practical. Answers (a), (b), and (c) usually make the diagnosis. Answer (d) is unreliable in children.

860. b) Sedation

861. d) Anticholinergic properties (not due to antihistaminic properties)

862. e) Ipratropium bromide can cause nasal irritation and bleeding.

863. b) Bronchodilator therapy. Answers (a), (c), (d), and (e) are not effective therapies.

864. e) Kieselbach plexus is located in the anterior part of nasal septum and consists of branches from the internal carotid (e.g., anterior and posterior ethmoidal arteries) and external carotid (e.g., sphenopalatine and terminal branches of internal maxillary arteries.)

865. a) Digital trauma; answers (b), (c), (d), (e), allergic rhinitis, chronic use of steroid nasal sprays, significant GE reflux, nasal polyps, vascular abnormalities, coagulation disorders, thrombocytopenia, and in adolescents, juvenile nasal angiofibromas are causes of nose bleeds.

866. e) Most nose bleeds stop spontaneously within a few minutes. The nares should be compressed, an upright position, kept as quiet as possible, and head titled forward to avoid blood goes back into the throat and ultimately swallowed into the stomach. Answers (a), (b), (c), and (d) are used if the previous therapies fail. Some patients need posterior nasal packing when the bleeding occurs from the back of the nasal cavity. Anterior and posterior nasal packing should be done by an ENT specialist. A cautarization by silver nitrate may be required.

867. d) A room humidifier, saline drops, and petrolatum (vaseline) applied to the septum may prevent epistaxis.

868. b) This is a characteristic presentation of ethmoidal polyps. Prolonged presence of ethmoidal polyps can cause widen bridge of the nose and erode adjacent bony structures.

869. e) Remove the foreign body by forcep or nasal suction under local anesthesia. General anesthesia is used if there is marked swelling, tissue overgrowth, or bleeding. Infection improves promptly when the foreign body is removed.

870. a) Choanal atresia

871. e) Bilateral choanal atresia. This is a characteristic presentation. The patients with unilateral choanal atresia are usually asymptomatic or appear with audible breathing sounds due to nasal obstruction.

872. (b). By 6 months of age. Therefore, symptoms of nasal congestion improve after 6 months of age in many children.

873. e) Viral upper respiratory tract infection; first, viral rhinosinusitis develops (i.e., edema and inflammation within the sinuses), nose blowing propels the nasal secretions into the sinus cavities, nasopharyngeal bacteria enter the sinuses (normally cleared readily) and grow inside due to an inadequate sinus drainage resulting in bacterial sinusitis.

874. e) Meningitis causes headache, vomiting, nuchal rigidity, and altered mental status. Bacterial sinusitis can also produce subdural abscess, epidural abscess, and cavernous sinus thrombosis.

875. b) Pot puffy tumor is the osteomyelitis of the frontal bone that is characterized by edema and swelling of the forehead.

876. a) Mucoceles in the frontal sinus can expand and displaced the eye causing diplopia.

877. c) Periorbital cellulitis causes erythema and swelling of the tissues surrounding the globe.

878. d) Orbital cellulitis is causes proptosis, chemosis, double vision (diplopia), impaired extraocular movements, and eye pain.

879. a) It is not clear whether antibiotic therapy has substantial benefit in clinically diagnosed acute bacterial sinusitis. A study reveals that a 14-day treatment with amoxicillin, amoxicillin-clavulanate, or placebo did not affect resolution and duration of symptoms, or days missed from school. About 50-60% children will recover without antibiotic therapy in acute bacterial sinusitis. However, the American Academy of Pediatrics recommend antibiotic therapy to promote resolution of symptoms and to prevent suppurative complications. The duration of antibiotic therapy is unclear but should be given 7 days after resolution of symptoms.

880. a) Frequent handwashing, avoiding persons with cold; influenza vaccine can prevent only some cases because influenza is responsible for only a small portion of all colds. Answers (c) and (d) have complications in children. Answer (e) does not make sense.

881. a) No therapy is indicated in the newborn because the mother has false positive VDRL titer. The confirmatory test (FTA-ABS) is negative. Answers (b) and (c) are the treatment for congenital syphilis. Answer (d) is the treatment for primary, secondary, or early latent (less than 1 year). Answer (e) is the treatment for neurosyphilis in children.

882. e) The infant should be treated because mother's last dose of penicillin was given within 30 days before delivery. The last dose of penicillin should be 30 days or more from the date of delivery.

883. c) Mother was treated adequately because VDRL titer dropped from 1:8 to 1:1 (fourfold or greater).

884. e) The infant's VDRL titer should be at least fourfold greater than the mother's titer. CDC also recommends to treat infants born to seropositive mother, an abnormal CSF WBC count or protein, regardless of CSF serology; infants with an active disease and/or untreated mothers.

885. d) Snuffles (rhinitis due to congenital syphilis); answers (a), (b), (c), and (e) are also early manifestations of congenital syphilis.

886. d) Coombs negative hemolytic anemia is noted in congenital syphilis. Osteochondritis at the wrists, elbows, ankles, and knees; periostitis of the long bones are characteristic features. Osteochondritis is painful and refusal to move extremities is called "pseudoparalysis of Parrot".

887. e) To wear appropriate protective clothing in tick infected areas and to check for and remove ticks as quickly as possible. Answer (a) is toxic in children if used frequently. Answer (b) is effective in 87% of cases in children age 12 years or more. Answer (c) is not recommended. Answer (d) was withdrawn from the market because it is a rare disease, can be easily treated, and frequently caused pain and swelling at the site of injection.

888. e) The most common reason for treatment failure is misdiagnosis in patients who do not have a Lyme disease. Lyme disease is easy to treat with amoxicillin or doxycycline (8 years or older). Chronic symptoms and clinical recurrences are not common. Intravenous therapy (ceftriaxone or penicillin) is required for meningitis. The prognosis for children are excellent.

889. e) A quantitative ELISA and a confirmatory Western blotting if the ELISA result is either positive or equivocal. Specific IgM antibodies appear at 3-4 weeks, peak at 6-8 weeks, and decline subsequently. IgM remains elevated despite adequate treatment. Therefore, IgM cannot diagnose active or recent infection. Specific IgG antibodies appear at 6-8 weeks, peak after 4-6 months, and may remain elevated indefinitely. Western immunoblotting is used as a diagnostic test for Lyme disease. However, many people who do not have Lyme disease have antibodies against the 41-kd flagellar protein of B. burgdorferi. Widely used commercial kits for serologic tests have only fair specificity and a high rate of misdiagnosis.

890. a) Isolation of B. burgdorferi from a symptomatic patient is diagnostic; cultures are obtain from blood, skin, CSF, myocardium, and synovium, Bacteria can take up to 4 weeks to grow and the frequency of isolation of the organism is low. This organism can be confused with normal tissue structures when examining tissue stains. Cultures are obtained when invasive procedures are performed (e.g., tissue biospy, CSF).

891. d) Knee (more than 90% of cases). Arthritis is a late disease and occurs weeks to months after the initial infection.

892. e) WBC counts 25,000-125,000/mL with a predominance of polymorphonuclear cells.

893. c) Polymorphs are not elevated; usually CSF has mild plecoytosis with a lymphocytic predominance, protein may be elevated, and a normal glucose level. However, the joint fluid has a predominance of polymorphonuclear cells.

894. e) Reassurance and observation for a typical annular rash that is called erythema migrans. If the tick is removed immediately, transmission of Borrelia burgdorferi is unlikely. The risk of transmission is related to the duration of feeding. It takes hours for the mouthparts of ticks to implant fully into the host tissue and takes days (36-72 hours) for the tick to become fully engorged. The tick is an Ixodes species. The larvae is uninfected. The tick gets infection from a host (e.g., white- footed mouse) which is a natural reservoir for B. burgdorferi.

895. b) Blood.

896. b) Anemia, when the mother was holding the newborn infant, the level of placenta is below the level of the infant. Therefore, blood goes from the baby into the placenta due to gravity resulting anemia. If the level of the placenta is above the level of the child, then blood goes from the placenta to the baby resulting in polycythemia.

897. b) Uncompensated septic shock (uncompensated or "cool shock"); early stage of septic shock is warm or compensated (i.e., blood pressure is normal, peripheral vasodilatation, increased cardiac output, tachycardia, tachypnea, adequate urination, and mild metabolic acidosis). Hypovolemic shock, cardiogenic shock, and late stage septic shock or any other types of shock is uncompensated or "cool shock" (i.e., high vascular resistance, cold extremities, hypotension, decreased cardiac output and oliguria). Hypotension is often a late finding in shock.

898. d) Compensated septic shock; compensated means normal blood pressure and warm extremities. Uncompensated means low blood pressure and cool extremities. Compensated shock is the early stage of septic shock. Uncompensated or "cool shock" is the late stage of septic shock. **Hypovolemic shock** appears with altered mental status, tachycardia, tachypnea, hypotension, cool extremities, and oliguria. **Cardiogenic shock** appears with cool extremities, delayed capillary filling time (more than 2-3 seconds), hypotension, tachypnea, increasing obtundation, and oliguria; these manifestations are due to decreased cardiac output and peripheral vasoconstrition. **Please remember**, a shock can occur with a normal blood pressure and decreased tissue perfusion or low blood pressure and decreased perfusion. Hypotension occurs when a shock is not compensated and appears in the late or advanced stage of shock.

899. e) Oral hydration therapy is recommended in children with mild to moderate dehydration when there is no vomiting or mild vomiting without abdominal distension.

900. a) AIDS patients have anemia, leukopenia, neutropenia, decreased CD4 counts, and hypergammaglobulinemia.

901. c) Vertical transmission is the route of infection in almost all new cases in pediatric population. Vertical transmission of HIV can occur before delivery (intrauterine), during delivery (intrapartum), or after delivery (through breast-feeding). In developed countries, the least common route of vertical transmission is breast-feeding.

902. c) The women who acquired HIV-infection after delivery or postnataly, 29% increase in HIV-1 infection in infants through breast-feeding than in women who acquired HIV-infection before pregnancy (14%). This indicates that viremia during primary infection doubles the risk of HIV-1 transmissions.

903. e) Highly active antiretroviral therapy (HAART) is followed by the treatment after birth to newborns.

904. a) Intrapartum because 60-70% of infected infants do not demonstrate detectable virus before 1 week of age.

905. a) Exposure to the infected blood and cervicovaginal secretions in the birth canal where HIV is noted in high titers during the late gestations and delivery.

906. (d) Twin A is more likely to be infected because twin A is exposed to the birth canal longer than twin B.

907. (a) Mucosa to lymphatics to lymph nodes to blood resulting in viremia (i.e., flu-like symptoms such as fever, rash, lymphadenopathy, and arthralgia occur mostly in adults). HIV goes first to dendritic cells (does not infect dendritic cells) and binds to its DC-SIGN surface molecules, which allows the virus to survive until it reaches lymphatics, then to lymph nodes where it binds to HIV-specific memory CD4 cells. There is progressive loss of CD4 cells (of T lymphocytes) and subsequent loss of control of HIV replication. Usually within 3-6 weeks from the time of HIV infection, it reaches a threshold and a burst of plasma viremia occurs resulting in flu-like symptoms. In addition to CD4 cells, HIV also infect the cells of the monocyte-macrophage lineage.

908. e) Asymptomatic. Answers (a), (b), (c), (d), failure to thrive, and interstitial pneumonia appear later. In USA and Europe, systemic and pulmonary findings are common. In Africa, chronic diarrhea, wasting, and severe malnutrition are common. The common clinical manifestations in children with HIV infections are recurrent bacterial infections, LIP (lymphocytic interstitial pneumonia), chronic parotid swelling, and early onset of progressive neuralgic deterioration.

909. a) Category A (mild symptoms) in addition to those symptoms, patients may have recurrent or persistent sinusitis or otitis media. The children with at least two mild symptoms that were mentioned above in clinical manifestations belong to category A.

Category B (moderate symptoms) patients usually have LIP (lymphocytic interstitial pneumonitis), persistent fever more than 1 month, oropharyngeal thrush persisting more than 2 months, recurrent herpes simplex infections (e.g., stomatitis, esophagitis, pneumonitis, disseminated disease), cardiomegaly, or nephropathy.

Category C (sever symptoms) patients with two serious bacterial infections (e.g., sepsis, meningitis, pneumonia) in a 2-year period, candidiasis (esophageal, lower respiratory tract), cryptococcosis, cryptosporidiosis (more than 1 month), PCP pneumonia, encephalopathy, malignancy, disseminated tuberculosis, severe weight loss, cerebral toxoplasmosis (onset after 1 month of age).

Category N means no signs and symptoms.

Category E means perinatally exposed.

Therefore, category EN means perinatally exposed but no symptoms and signs.

910. e) AIDS (category C) patients develop **cryptococcosis**.

911. a) Presence of MAC in stools does not confirm a diagnosis of disseminated MAC. Atypical mycobacteral infection, especially MAC, causes disseminated disease in HIV-infected children who are severely immunocompromised (i.e., CD4 cells are less than 100 and the patient is not treated).

912. a) Clarithromycin, ethambutol, and rifabutin. The patient should be treated with at least two drugs (e.g., ethambutol and clarithromycin (or azithromycin). A third drug (e.g., rifabutin, rifampin, amikacin, or ciprofloxacin) is added to decrease the emergence of drug-resistant organisms.

913. e) Trimethoprim (TMP)-sulfamethoxazole (SMZ) (15-20 mg/kg/day of TMP and 75-100 mg/kg/day of SMZ every 6 hours intravenously) with corticosteriods. After the clinical improvement, oral therapy with TMP-SMZ should be continued for a total of 21 days. Alternative therapy is intravenous pentamidine.

914. b) Allergic reaction occurs in about 33% cases of PCP due to the therapy with TMP-SMZ. Adjuvant corticosteroid therapy reduces the allergic reaction.

915. e) LIP is noted in about 25% of cases.

916. e) The etiology of LIP is unknown. However, LIP is associated with a primary EBV infection. LIP is a chronic process with nodular lymphoid hyperplasia in the bronchial and bronchiolar epithelium, may cause progressive alveolar capillary block over months to years.

917. a) LIP produces a chronic diffuse reticulonodular pattern (rarely with hilar **lymphadeonopathy**). Answer (b) is noted in newborns with RDS (respiratory distress syndrome). Answer (c) is noted in pneumomediastinum.

918. b) Resting sinus tachycardia (64% of cases); answer (a) occurs in 17% of cases; answer (d) occurs in 5% of cases; answer (e) and left ventricular hypertrophy were common.

919. c) Candidiasis (erythematous or pseudomembranous). Other lesions are ulcerative gingivitis and periodontitis.

920. a) Chronic or recurrent diarrhea; other symptoms are malabsorption, abdominal pain, dysphagia, and failure to thrive.

921. e) TPN. The patients with “wasting syndrome” (a loss of more than 10% of body weight) usually require intravenous TPN (total parenteral nutrition).

922. d) Elevated liver enzymes (transaminases)

923. e) Drug-induced pancreatitis (e.g., pentamidine, didanosine, lamivudine) is common in AIDS. MAC or CMV rarely causes pancreatitis.

924. a) Hyporeflexia is absent. AIDS with progression produce marked apathy, spasticity, hyperreflexia, and gait abnormalities. Answers (b), (c), (d), and (e) indicate progressive encephalopathy that may have stable plateaus between progressions. Encephalopathy may involve language, fine motor, and gross motor functions; older children may have behavioral problems and learning disabilities.

925. c) Digoxin should be given to the mother and it crosses the placenta to the fetus.

926. d) Afterload-reducing agents and ACE inhibitors (e.g., captopril, enalapril) are used in conjuction with digoxin and furosemide. Afterload-reducing agents (e.g., ACE inhibitors, hydralazine, nitroglycerin, nitroprusside, prazocin, carvedilol) are not generally used in patient with stenotic lesions of the left ventricular outflow tract.

927. c) ACE inhibitors (e.g., captopril) decrease aldosterone production and reduce salt and water retention. These medications are used in hypertension and cardiac failure (nonsteotic lesions) Arterial dilatation causes afterload reduction and venous dilatation causes preload reduction. The principal effect of ACE inhibitors is arterial dilatation.

928. e) Captopril produces renal toxicity and failure.

929. e) Blood thiocyanate level (more than 10 g/dL causes toxicity)

930. e) Nitroprusside (intravenous) administration causes thiocyanate poisoning.

931. b) Nitroprusside should not be used in patients with pre-existing hypotension because it can cause sudden hypotension. Nitroprusside is used in critically ill patients with hypertension. It primarily causes peripheral arterial vasodilatation and afterload reduction, but may cause venodilatation and preload reduction by decreasing venous return to the heart.

932. a) Dopamine is predominantly beta-adrenergic agonist.

933. b) Hypotension is secondary to a peripheral vasodilatation. Milrinone is used in patients with low cardiac output who are unresponsive to standard therapy. Milrinone is used as an adjunct to dopamine or dobutamine.

934. c) Increased administration of intravenous fluids increase the intravascular volume. Other choices cause hypotension.

935. b) Amrinone is a phosphodiesterase inhibitor. It causes thrombocytopenia that depends on the rate of infusion and duration of therapy.

936. b) Metoprolol (a selective beta 1-adrenergic receptor antagonist) is used commonly. Answer (c) is currently under study. Answer (d) is used in ICU patients, Answers (a) and (e) do not make sense. Metoprolol improves exercise tolerance; decreases hospitalization and mortality.

937. e) GERD (gastroesophageal reflux disease)

938. c) 16-20 weeks of gestation. Therefore, polyhydramnios indicates lack of normal swelling, esophageal or GI obstruction.

939. a) At rest, LES pressure is normally about 20 mm Hg; values below 10 mm Hg are considered abnormal, However, there is no reflux when LES pressure is above 5 mm Hg.

940. d) Esophageal atresia

941. e) T-E fistula is noted in 90% cases of esophageal atresia. About 50% cases of esophegeal atresia are associated with VATER/ VACTERAL syndrome.

942. e) Upper end of the esophagus is ended blindly and the lower end of esophagus is connected to the trachea.

943. a) Achalasia presents with a characteristic "bird's beak" appearance (i.e., a smooth tapering of the lower esophagus leading to the closed lower esophageal sphincter). Manometry confirms the diagnosis and reveals the incomplete relaxation of a high- pressure lower esophageal sphincter (LES) during swallowing.

944. b) Pneumatic dilatation and Heller myotomy are the most effective therapies. Initially, pneumatic dilatation should be performed. Answers (d) and (e) give temporary relief in dysphagia. Answer (c) is useful but 50% of patients require a repeat injection of botulinum toxin within 1 year.

945. c) Head MRI should be performed to rule out Arnold Chiari malformation that has the similar clinical manifestations. The symptoms improve after cranial surgery. This patient does not need myotomy. If the MRI is negative, patient needs myotomy.

946. c) Manometry is the preferred diagnostic study to detect the precise dysfunction of the UES. Answer (e) can make the diagnosis.

947. d) Enlarged mediastinal or subcarinal lymph nodes (e.g., TB, histoplasmosis, lymphoma) produce compression from outside the esophagus resulting in dysphagia. Answer (a), (b), or (c) causes dysphagia lusoria.

948. a) Esophageal duplication cysts are the most common.

949. e) Resipiratory distress is due to the compression from the esophageal duplication cyst to the adjacent airways. Answer (b) is common in older children.

950. c) Lower part of esophagus

951. a) Barium swallow or chest CT scan

952. a) Surgery or laparoscopic excision

953. e) Gastroesophageal reflux. Among hiatal hernias, sliding hiatal hernia is the most common type. Other type is paraesophageal hiatal hernia.

954. c) Transient LES (lower esophageal sphincter) relaxation

955. a) Increased movements increase the GE reflux.

956. c) Most of them resolve by 12 months of age and nearly all of them resolve by 24 months of age.

957. b) Maximum up to 50% of cases

958. b) Chromosomes 13 and 9

959. e) Asthma is absent in infants. Other manifestations in infants are signs of esophagitis (e.g., arching, chocking, gagging, feeding aversion, irritability), stridor, or lower airway disease.

960. e) Regurgitation occurs in preschool years. Other clinical manifestations in older children with GE reflux are laryngitis and sinusitis. Some children appear with neck twisting or contortions (Sandifer syndrome ) in GE reflux.

961. a) History and physical examination. Answers (b) and (c) are performed in patients with vomiting and dysphasia to rule out obstruction. Extended distal esophageal pH monitoring documents acid reflux episodes that is the most important type of reflux episode for a pathologic reflux. However, this test is not the diagnostic test for patients with GERD. Distal esophageal probe is placed at a level of 87% of the nares-LES distance. When the distal esophagus is exposed to acid, pH is less than 4 that is noted only 5-8% of the total monitored time. Endoscopy can diagnose esophageal pathology. **Radionuclide technetium scintigraphy** can diagnose aspiration and delayed gastric emptying. The intraluminal impedance testing can document nonacid reflux but is used less frequently.

**Laryngotracheobronchoscopy** reveals laryngeal inflammation, vocal nodules, and can diagnose silent aspiration and extraesophageal GERD.

**Esophageal manometry** can diagnose dysmotility, particularly in preparation for antireflux surgery.

**Empirical antireflux therapy** with a high-dose proton pump inhibitor (PPI) (e.g., omeprazole, lansoprazole) can be used in older children (like adults) without all these investigations. However, if the patients do not respond or need longer therapy, formal diagnostic evaluations should be performed.

962. a) Efficacy of acid suppression during treatment.

963. e) Fundoplication surgery is indicated when the medical management failed. Dietary measures include thickened feeding technique in infants (e.g., add 1 tablespoon of rice cereal per ounce of formula), hypoallergic diet, avoid acidic foods (e.g., tomatoes, chocolate, mint), avoid beverages (e.g., alcohal, juices, carbonated drinks, caffeinated drinks).

Weight reductions for obese and avoid smoking exposure Positioning is important because more reflux episodes in infants while in supine and side positions as compared to with prone positions. However, prone positions increase SIDS. Therefore, AAP recommends nonprone position during sleep in patients with GERD.

964. a) AAP recommends nonprone position (supine or side) during sleep. Seated position worsens infants reflux. When the infant is observed, prone and upright carried positions can minimize GERD.

965. e) A head elevation and left side position; head elevation means to elevate the head of the bed ( not extra pillows). Extra pillows produce abdominal flexion and compression resulting in worsening of GERD.

966. e) Proton pump inhibitors (e.g., omeprazole, lansoprazole) are superior to histamine-2 receptor antagonists (e.g., cimetidine, famotidine, ranitidine) in patients with severe and erosive esophagitis.

Prokinetic agents are metoclopramide, bethanicol, and erythromycin; most of these increase LES pressure, some improve gastric emptying or esophageal clearance, none affects transient LES relaxation.

967. e) Omeprazole (PPI) blocks the hydrogen- potassium ATPase channels.

968. d) Famotidine (histamine-2 receptor antagonist) inhibits histamine receptors on gastric parietal cells.

969. c) Metoclopramide (prokinetic agent) is dopamine-2 and 5HT-3 antagonist.

970. b) Bethanicol (prokinetic agent) is a cholinergic agonist.

971. a) Erythromycin (prokinetic agent) is a motilin receptor antagonist.

972. a) Fundoplication is indicated in chidren with GERD plus strictures or esophagitis, or those are at risk to develop chronic lung disease. Answers (b) and (c) are treated with cimetidine or famotidine. Answers (d) and (e) are treated with omeprazole and lansoprazole.

973. a) Preoperative accuracy of diagnosis of GERD and the skill of the surgeon are the most important predictors of a successful surgical outcome in patients with GERD.

974. e) In children, distal left lateral esophageal wall is the most common site of perforation, Spontaneous esophageal rupture is called Boerhaave syndrome. This syndrome is rare and occurs due to sudden increase in intraesophageal pressure (e.g., vomiting, coughing, straining).

975. a) In neonates, right side rupture of esophagus in common.

976. (e) Cervical esophageal perforation; this is a characteristic presentation (pain is soothed by cold water polydipsia).

977. c) Esophageal rupture or perforation

978. e) Cervical spine and chest x-ray reveals a mediastinal widening or paracervical free air. If normal, use answer (a). If still normal, use answer (b). Answer (c) has a 30% false- negative rate. CT scan is diagnostic in difficult cases.

979. e) Surgical repair may not be required in mild esophageal perforation. However, majority of esophageal perforations require surgical repair.

980. c) Esophageal varices should be considered when a child has hematemesis and splenomegaly.

981. e) Endoscopy is diagnostic and therapeutic. Answer (a) can make the diagnosis.

982. a) Prophylactic sclerotherapy and propranlol can prevent bleeding from esophageal varices. Answers (b), (c), (d), and (e) do not make any sense.

983. a) Laryngospasm causing obstructive apnea in infants with GERD.

984. b) Esophageal adenocarcinoma

985. a) Barrett esophagus means a transformation of normal esophageal squamous epithelium into the intestinal columner epithelium.
986. a) Atypical (or respiratory or extraesophageal) GERD patients have an unexplained or refractory otolaryngologic and respiratory symptoms.
987. e) Aggressive use of PPI (porton pump inhibitor) for at least 3 to 6 months is indicated. Answers (a) and (b) are also useful.
988. b) Eosinophilic esophagitis is a non-GERD esophagitis.
989. e) Elimination diets for those with proven allergies. Inhaled and systemic corticosteroids are used for nonresponders and for nonallergic (or primary) eosinophilic esophagitis.
990. c) “Pill” esophagitis can occur due to swallowing of a medication (e.g., NSAID, tetracycline, ferrous sulfate, and potassium chloride)
991. e) Supportive, answer (a), b), and (c) may be useful
992. a) GERD is noted in about 50% of asthmatic children.
993. e) A complication of GERD
994. b) Dental erosion on the lingual surface is the most common oral lesion in GERD.
995. a) Chemotherapy is not indicated. Adenocarcinoma is rare in children . Answer (e) is indicated for progressive lesions.
996. b) Liquid alkali substances (70% of cases), liquid acid (20% of cases). Liquid alkali causes deep liquefaction necrosis.
997. a) Drain decloggers because they are tasteless. Acidic agents are bitter and they produce coagulation necrosis and a protective thick eschar.
998. e) An upper endoscopy is recommended, about 20% of patients will develop strictures.
999. e) Absence of oral lesions cannot exclude a significant esophageal injury.
1000. e) A dilution of water or milk is recommended in acute therapy for caustic ingestion. Answer (a), (b), (c) and (d) are contraindicated.
1001. d) Allopurinol produces rashes including erythema multiforme, hepatitis, vasculitis, peripheral neuropathy, and renal impairment.
1002. b) Prostaglandin causes apnea, hypotension, seizure-like activity, gastric outlet obstruction (if used 5 days or more)
1003. e) Aminocaproic acid produces arrythmia, hypotension, bradycardia, and nasal congestion.
1004. a) Antivenin polyvalent produces sensitivity reactions including anaphylaxis and treated with epinephrine, antihistamine, and a brief holding of the dose.
1005. c) Ascorbic acid produces renal stones.
1006. a) Beclomethasone produces oral candidiasis, hoarseness, burning and irritation of nasal mucosa.
1007. b) Azathioprine produces fever, chills, GI symptoms, rash, thrombocytopenia, leukopenia, and hepatotoxicity.
1008. c) Atropine sulfate produces dry hot skin, tachycardia, ataxia, tremor, and impaired vision.
1009. d) Atenolol produces bradycardia, lethargy, wheezing, dyspnea, and constipation.
1010. e) Astemizole produces syncopal episodes, prolonged QT intervals leading to fatal arrythmias. Astemizole is used for allergy and rhinitis. This medicine should be discontinued if ECG reveals prolonged QT intervals.